

OCTOBER 1999
VOLUME 41
NUMBER 10

STORM DATA



AND UNUSUAL WEATHER PHENOMENA
WITH LATE REPORTS AND CORRECTIONS



noaa

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

NATIONAL ENVIRONMENTAL SATELLITE,
DATA AND INFORMATION SERVICE

NATIONAL CLIMATIC DATA CENTER
ASHEVILLE, NC

Cover: The Bahia Hondo Bridge in the Lower Keys of Florida is battered by the high wind and pounding surf associated with Hurricane Irene. Irene made landfall at Key West in southern Florida on October 15, 1999. Irene then crossed into southern Florida and inundated the Miami and Ft. Lauderdale areas with 10 – 20 inches of rainfall. See page 4 for details. (Photograph courtesy of Jim Edds, Photographer, Key West, Florida)

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STORM DATA contains all confirmed information on storms available to our staff at the time of publication. Late reports and corrections will be printed in each edition.

Except for limited editing to correct grammatical errors, the data in **Storm Data** are published as received.

Note: "None Reported" means that no severe weather occurred and "Not Received" means that no reports were received for this region at the time of printing.

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The editors of **STORM DATA** solicit your help in acquiring photographs (prints or slides; black and white, or color), maps, clippings, etc. of significant or severe weather events (past or present) for use in the "Outstanding Storms of the Month" section of **STORM DATA**. We request our subscribers or other interested persons to mail such items to:

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151 Patton Avenue
Asheville, NC 28801

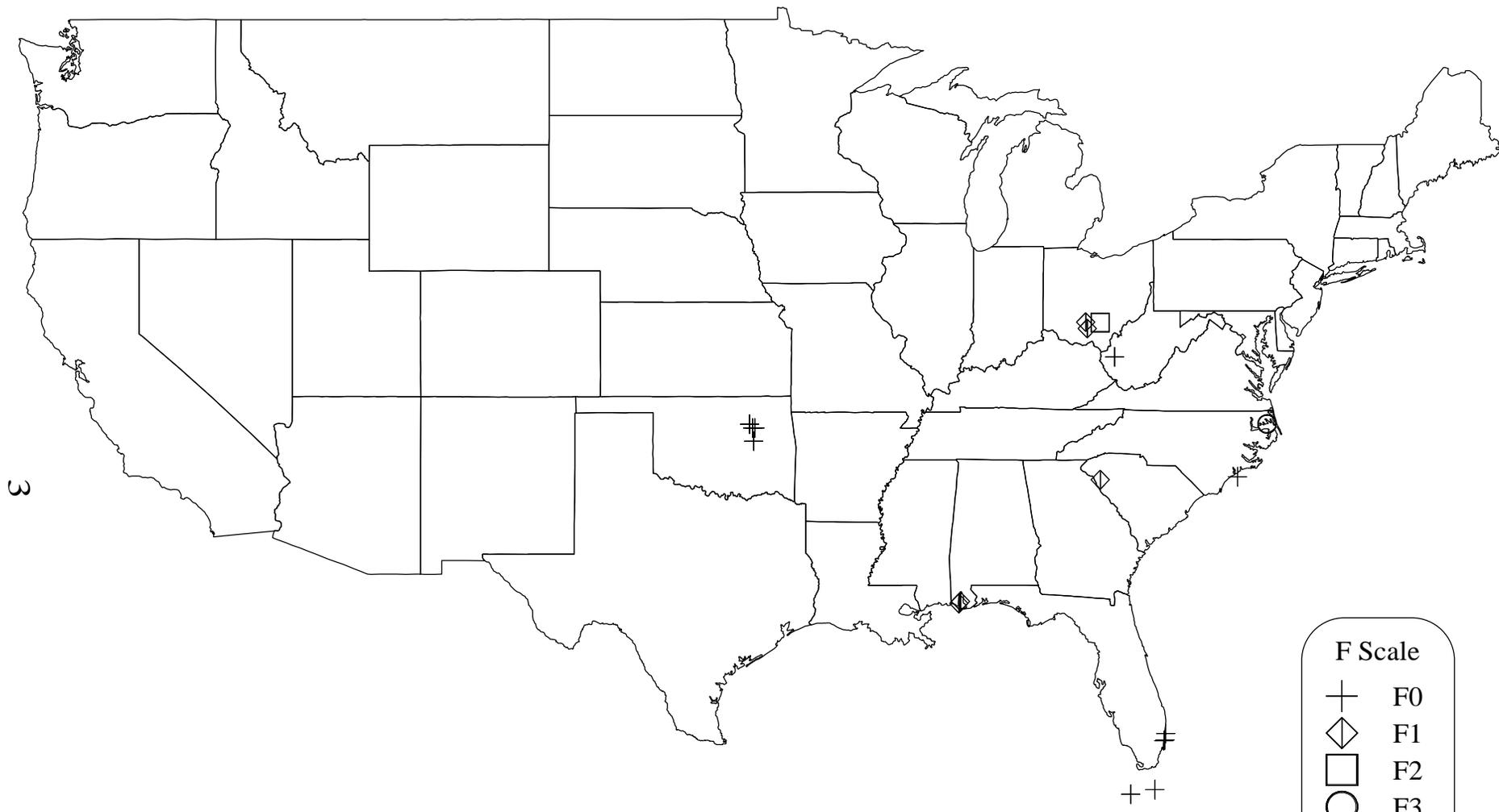
Any such items received by the editor will be for use in **STORM DATA** only. Any other use will be with the permission of the owner of said items. Materials will be returned if requested.

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Thomas R. Karl
Director,
National Climatic Data Center

October 1999 Confirmed Tornadoes



3

F Scale	F0	F1	F2	F3	F4	F5	Total
Number	11	5	1	1	0	0	18

F Scale

- + F0
- ◇ F1
- F2
- F3
- △ F4
- * F5

OUTSTANDING STORMS OF THE MONTH

1. HURRICANE IRENE CROSSES OVER SOUTHERN FLORIDA

Tropical Depression Thirteen formed in the Caribbean sea during the early morning hours of October 13th, 1999. It quickly strengthened into Tropical Storm Irene later that day. Irene moved toward the north-northeast over the island of Cuba on the 14th, resulting in several inches of rainfall. Irene entered the Straits of Florida on the north side of Cuba and intensified to hurricane status during the early morning hours of the 15th, when winds reached 65 knots (75 mph). Hurricane Irene continued moving north-northeast and made landfall at Key West, FL later that morning. Damage was limited to localized street flooding and superficial structural damage. Irene then moved into southeast Florida, bringing tropical storm conditions (sustained 39-73 mph winds) and torrential rains (10 to 20 inches) while hurricane force winds occurred offshore. A wind gust of 93 mph was reported near Bell Glade, FL. The lowest barometric pressure on the south Florida peninsula was 989.9 millibars at Opa Locka Airport. Storm surge and beach erosion were minimal.

Eight persons died in the aftermath of Irene. Five were electrocuted by downed power lines, including three people from one family. Three others drowned in vehicle-related accidents. Damage in southeast Florida, mainly from flooding is estimated at \$600 million which includes \$335 million in agricultural losses. An

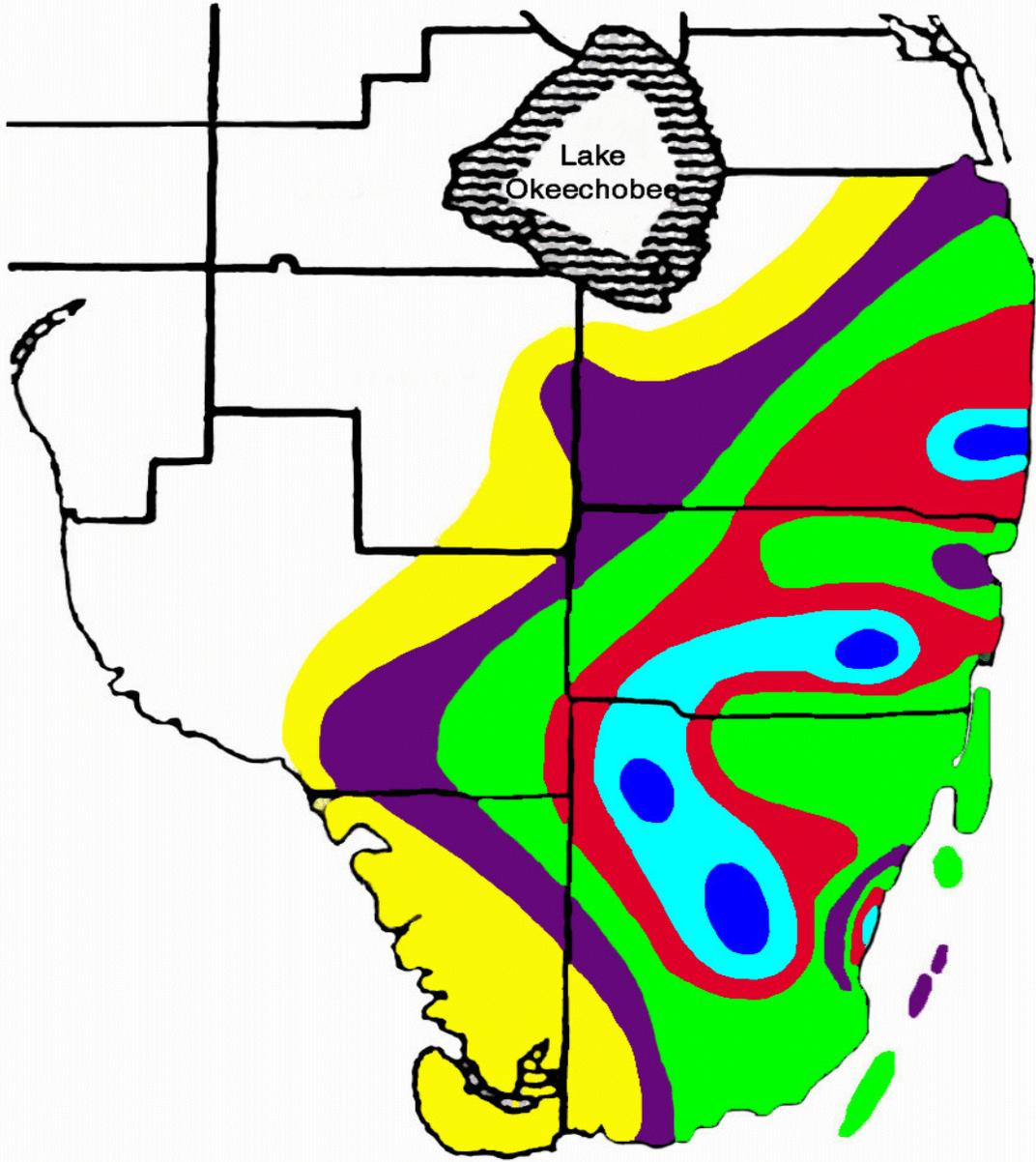
estimated 700,000 customers lost electricity. Flooding in a few residential areas lasted for a week displacing several hundred persons and isolating thousands more.



(Photograph courtesy of Jim Edds, Photographer, Key West, Florida)

Above: The Bahia Hondo Bridge located in the Lower Keys of Florida, is battered by the high winds and pounding surf associated with Hurricane Irene. The bridge is located at mile marker #36 of US Highway 1.

Next Page: An isohyet (lines of equal precipitation) map of southern Florida indicates the rainfall amounts for the area. Several locations received more than 16 inches of rain, resulting in localized urban flooding. Many streets and waterways flooded during the periods of heavy rainfall.



- > 15 Inches
- 12.5 - 15 Inches
- 10 - 12.5 Inches
- 7.5 - 10 Inches
- 5 - 7.5 Inches
- 2.5 - 5 Inches
- < 2.5 Inches

**Storm Total Precipitation
from Hurricane Irene
October 14-16, 1999**

(Image courtesy of Wayne Colin, Meteorologist, National Weather Service, Miami, Florida)

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ALABAMA, North Central

ALZ006

Madison

01 0000CST

0 0 0 0 **Drought**

31 2359CST

Monthly rainfall observed at the Huntsville International Airport was 1.24 inches. This was the 5th driest October on record.

ALZ044

Montgomery

01 0600CST

0 0 0 0 **Extreme Cold**

The record low temperature of 44 degrees was tied at Dannelly Field.

Jefferson County

Brookside

03 1755CST

0 0 5K 0 **Hail (1.75)**

Golfball size hail was reported in Brookside.

Jefferson County

Gardendale

03 1759CST

0 0 2K 0 **Hail (1.00)**

Quarter size hail fell in Gardendale.

ALZ044

Montgomery

24 0600CST

0 0 0 0 **Extreme Cold**

A new record low temperature of 32 degrees was measured at Dannelly Field.

ALZ006

Madison

25 0600CST

0 0 0 0 **Extreme Cold**

A new record low temperature of 30 degrees was observed at the Huntsville International Airport.

ALZ044

Montgomery

25 0600CST

0 0 0 0 **Extreme Cold**

A new record low temperature of 33 degrees was measured at Dannelly Field.

ALABAMA, Southeast

NONE REPORTED.

ALABAMA, Southwest

Mobile County

5 W Mobile

09 0320CST

0.7

200

0

0

40K

Tornado (F0)

0325CST

An F0 tornado touched down just west of I-65 and Airport Boulevard. The tornado first touched down at the Lafayette Apartments near Downtowner Boulevard and damaged several apartment roofs. A brick wall was also blown down at the apartments. The tornado moved north and blew some trees and awnings down. The tornado crossed Airport and caused roof damage to some apartments at Maison De Ville. The tornado continued moving north and blew some trees down north of Conway before lifting back into the clouds. The tornado spent most of its time at tree or roof level. No injuries were reported.

Mobile County

Saraland

09 0415CST

2.5

300

0

0

100K

Tornado (F1)

0425CST

Around 415 AM CST...a tornado (F1) touched down in Saraland, near the Walmart Superstore. The roof of the store was damaged. The tornado then skipped across Industrial Parkway and touched down again on Sheldon Beach Road near Goldenrod. From here the worst damage occurred with several businesses and one home damaged. Power lines were also blown down. The tornado moved north and crossed I-65 and a nearby service road where some trees were also blown down. The tornado then moved across a wooded area and touched down again near Alvarez and Wilson Roads. From here several homes suffered roof damage along with more trees down. The tornado continued to skip along the ground and touched down near Forest and Robert Williams Roads; more trees were damaged in this area. Before lifting back into the cloud, the storm did tree and power line damage along Martha Alley Road. No injuries were reported.

Mobile County

Big Creek Lake

09 0445CST

0

0

10K

Thunderstorm Wind (G60)

High winds blew several trees down near Big Creek Lake.

ALASKA, Northern

AKZ008

Lower Yukon Valley

01 0000AST

0

0

Winter Storm

0900AST

An Occluded Front moved over southwest Alaska then stalled over the north Lower Yukon Valley with subsequent waves not moving as far north. Freezing Rain occurred at Kaltag, which received .03 inch, and at Galena, which received .01 inch, both liquid equivalents.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ALASKA, Northern

AKZ001	Arctic Slope Coastal								
	05	1015AST			0	0			High Wind (G52)
	06	1500AST							
	Strong High Pressure Over the Beaufort Sea remained stationary while an occluded front moved north over eastern Alaska but dissipated near the Brooks Range. Some maximum winds: Deadhorse Airport ASOS 46 mph sustained, gust 58 mph. Barter Island AWOS 49 mph sustained, gust 59 mph. Nuiqsut Airport AWOS 40 mph sustained, gust 51 mph. Kuparuk 39 mph sustained, gust 52 mph Colville Village Co-op 647pm 5th gusts 57 mph; 1059am 6th gusts to 53 mph. Unofficial report from Western Geophysical platform offshore: peak gust 72 mph evening of 5th.								
AKZ005-007	Upper Yukon Valley - Tanana Valley								
	17	2045AST			0	0			Winter Storm
	18	2300AST							
	Several frontal waves moved from the western Gulf of Alaska northeast over the eastern Tanana Valley and southeast Upper Yukon Valley before the entire frontal system drifted southeast of the Tanana Valley late on the 19th. Freezing Rain was reported at Tanacross and Northway (.02") in the Tanana Valley and at Eagle (.05")in the Upper Yukon Valley. Tok DOT Tanana Valley) reported Glaze on roads morning of the 18th.								
AKZ007	Tanana Valley								
	21	0000AST			0	0			Heavy Snow
	22	1000AST							
	An occlusion from a storm over the Gulf of Alaska moved north over the deep cold air over the Tanana Valley producing snow. 24-hr snowfalls at Co-op sites: Tok D.O.T. 9 inches between Dot Lake and Tanacross 7am 21st. Dry Creek 5.9 inches 1pm 22nd Tanacross 8inches 10am 22nd								
AKZ001	Arctic Slope Coastal								
	24	1435AST			0	0			Blizzard
		1700AST							
	A low pressure center developed over the Mackenzie Delta of Canada on the 24th and then deepened and drifted west northwest. Blizzard conditions occurred at Barter Island.								

ALASKA, Southeast

AKZ023-025>028	Cape Decision To Cape Fairweather-Coastal Area - Juneau Borough-Admiralty Island-Icy Strait Area - Frederick Sound-Kupreanof-Wrangell Islands To Ernest South - Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area								
	14	0400AST			0	0			High Wind (G60)
		2200AST							
AKZ024	Lynn Canal-Glacier Bay								
	18	1630AST			0	0			High Wind (G61)
		2200AST							
	Strong high pressure rises behind a fast moving frontal boundry pushed a strong Southerly up Lynn Canal and produced 61kt winds at Skagway.								
AKZ022	Cape Fairweather To Cape Suckling-Coastal Area								
	20	0400AST			0	0			High Wind (G70)
		2000AST							
	A deep low in the Northern Gulf of Alaska brought strong winds to the Eastern Gulf of Alaska Coast where winds in excess of 70kt were observed near Icy Cape.								
AKZ028	Dixon Entrance To Cape Decision-Coastal Area								
	22	2300AST			0	0			High Wind (G61)
	23	0300AST							
	Hydaberg Seaplane Base experienced high winds to 61kt as a cold front moved onshore.								
AKZ025-027>028	Juneau Borough-Admiralty Island-Icy Strait Area - Southern Southeast Alaska Ernest Sound To Dixon Entrance - Dixon Entrance To Cape Decision-Coastal Area								
	24	0400AST			0	0			High Wind (G66)
	25	0400AST							

Storm Data and Unusual Weather Phenomena

October 1999

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ALASKA, Southern

AKZ020

Aleutian Islands

09	0000AST				0	0			High Wind (G55)
	2100AST								

A moderate weather front moved into the extreme western Aleutians very early Saturday. Easterly wind gusts reached 63 mph at Shemya in advance of the front. As the front elongated eastward across the Aleutians, it began to weaken and winds in advance of the front began to decrease.

AKZ017>018-020

Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula - Aleutian Islands

11	0000AST				0	0			High Wind (G56)
	2100AST								

A vigorous 980 mb low, just south of Cold Bay Sunday afternoon, moved steadily east northeast to a position 180 miles south of Kodiak late Sunday. The front associated with this low continued northeastward through the Gulf of Alaska to a position just offshore of the northern and eastern Gulf of Alaska coasts late Sunday.

Brisk easterly winds preceded the front, while brisk north winds were observed along the 'back side' of the low.

Wind gusts reached 64 mph in gusts at Dutch Harbor about midday Monday.

Prefrontal, adjusted wind gusts peaked at 62 mph at the Kodiak ASOS Monday evening. Strongest winds were accompanied by heavy rains.

At Middleton Island wind gusts peaked at an ASOS adjusted 59 mph from the east just after noon Monday.

AKZ015-017>018

Cook Inlet - Central Gulf Coast - Kodiak Island-Eastern Alaska Peninsula

15	1200AST				0	0			High Wind (G73)
	16 0200AST								

A moderate front moved from the north-central Pacific Thursday across the northeast Gulf of Alaska coast and into Southeast Alaska very early Saturday. Brisk easterly winds preceded the front.

Easterly winds at the Kodiak ASOS reached an adjusted speed of 62 mph between 3pm AST and 11pm AST Friday. At the Booth Lake site (remote), wind gusts peaked at 58 mph Friday evening.

East wind gusts at Middleton Island peaked at an AWOS adjusted 84 mph at just after 8pm Friday. Wind gusts near or above 60 mph were recorded at the site from just after noon Friday until frontal passage just after midnight, nearly 12 hours later. Winds shifted south southwest and diminished abruptly as the front passed. Easterly winds near 80 mph were also recorded over the northern Gulf of Alaska waters as the front approached Friday.

Northeast wind gusts from 50 to locally 60 mph were reported across portions of the Kenai Peninsula Friday. Snow and blowing snow were reported around the Homer airport (near sea level), however reports of whiteout conditions were received from the ridge to the north.

AKZ017

Central Gulf Coast

17	0000AST				0	0			High Wind (G50)
	18 1200AST								

A moderate warm front, moving north through the Gulf of Alaska, brought locally brisk east winds to much of the central Gulf Coast. Wind gusts reached 58 mph at Cordova early Monday.

Cook Inlet

40 S Kenai

17	1800AST				0	0			Flash Flood
	18 1030AST								

A flash flood watch was issued for streams on the Cook Inlet side of the Kenai Peninsula late Sunday based on reports of locally heavy rainfall reports (around 1 inch/6 hours). Kenai recorded nearly 1 1/2 inches of rain in less than 12 hours...with nearly equal amounts recorded at the Swanson River site.

The flash flood watch was cancelled at 10:30 am Monday. Stream levels were reported locally high, but crested below flood stage. No flash flooding was actually reported.

AKZ017

Central Gulf Coast

21	0000AST				0	0			High Wind (G55)
	0900AST								

An intense low moved northeast into the Gulf of Alaska Thursday...reaching a depth of 967 mbs late Thursday morning. The front associated with the storm, tracked northeast to a position just south of Yakutat and Kayak Island at 10 am. Strong easterly winds hit the southeast entrance to Prince William Sound, with Middleton Island recording a peak ASOS adjusted wind of 63 mph between 3 am and 4 am AST. The M/V "Westwood Cleo", in the open Pacific waters southwest of the Gulf of Alaska, reported funnel clouds on the 'back side' of the storm.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ALASKA, Southern

AKZ017	Central Gulf Coast								
	26	0000AST 0600AST			0	0			High Wind (G60)
	An intense 968 mb low in the northeast Gulf of Alaska 'coffin corner' Monday afternoon, rotated northwest and began weaken rapidly to a position near Hinchbrook Island at 4 am ADT Tuesday. Strong southwest winds were observed at Middleton Island along the southeast quadrant of the storm...however these winds were short-lived as the low rapidly weakened. Peak ASOS adjusted winds at Middleton Island reached 69 mph from a west southwest direction between 4:15 am and 4:35 am Tuesday.								
AKZ017	Central Gulf Coast								
	27	0000AST 2200AST			0	0			Heavy Snow
	Heavy snowfall was reported along much of the Seward Highway from Turnagain Pass to Seward. Total snowfall ranged from 1 to 1 1/2 feet in less than 24 hours.								
AKZ017	Central Gulf Coast								
	31	0000AST 2359AST			0	0			Heavy Snow
	28 inches of new snow fell in the Thompson Pass area in slightly less than 24 hours. Other, lower elevation areas also received considerable snowfall.								

AMERICAN SAMOA

NOT RECEIVED.

ARIZONA, Central and Northeast

AZZ015	Western Mogollon Rim								
	16	2300MST			0	0			High Wind (G82)
	17	0400MST							
	Damaging wind moved through the higher elevations of the western Mogollon Rim during the late night of October 16 and early morning of October 17. A wind sensor at the Arizona Snowbowl Ski Resort recorded a peak wind of 94 mph. The original estimate of 500 wind downed trees around the resort was later updated to 1,500 trees by resort employees. The elevation of Arizona Snowbowl ranges from 9,200 to 11,500 feet. Sunset trail in the Kachina Peaks Wilderness, adjacent to Snow Bowl, had 75 downed trees across it. Live trees were up to two feet in diameter and dead trees up to 2 1/2 feet in diameter were blown across the trail. The highest wind gust at the Flagstaff Pulliam Airport at about 7000 feet elevation was 53 mph.								

ARIZONA, Northwest

NONE REPORTED.

ARIZONA, South

NONE REPORTED.

ARIZONA, Southwest

NONE REPORTED.

ARKANSAS, Central and North Central

Polk County									
	09	1350CST			0	0			Hail (1.00)
Montgomery County									
	09	1405CST			0	0			Hail (0.75)
Montgomery County									
	09	1437CST			0	0			Hail (1.00)
Montgomery County									
	09	1445CST			0	0			Hail (0.75)
Hot Spring County									
	09	1545CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

October 1999

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ARKANSAS, Central and North Central

Garland County

4 N Royal 09 1546CST 0 0 Hail (0.75)

ARKANSAS, East

NONE REPORTED.

ARKANSAS, Northwest

NONE REPORTED.

ARKANSAS, Southeast

NONE REPORTED.

ARKANSAS, Southwest

NONE REPORTED.

CALIFORNIA, Extreme Southeast

NONE REPORTED.

CALIFORNIA, North Central

Tehama County

Mill Creek 01 0001PST 0 22 Wild/Forest Fire
13 1800PST

The Gun 2 Incident was a civilian caused fire, but was exacerbated by high winds, low relative humidities, thick fuels, and inaccessibility. Twenty-two injuries and zero deaths were reported. The incident, which began in late September, was responsible for burning 60,390 acres. Fire suppression costs totaled 10 million dollars.

Shasta County

10 SW Redding 01 0001PST 0 4 13.3M Wild/Forest Fire
04 0800PST

The Canyon Incident was an equipment caused fire, but was influenced by dry, north winds of 30 to 40 mph on September 27th and 28th. Four injuries and zero deaths were reported. The fire, which began September 27th, was responsible for burning over 2,500 acres as well as destroying 64 residences, 206 outbuildings, and 136 vehicles. Fire suppression costs totaled 1.4 million dollars.

CAZ015-018-063

Northern Sacramento Valley - Carquinez Strait And Delta - Mountains Southwest Shasta County To Northern Lake County

15 0330PST 0 0 High Wind (G50)
1815PST

North winds gusted to 40 mph at Redding, 41 mph at Fairfield, 42 mph at Red Bluff, and 50 mph at Knoxville Creek.

Butte County

10 NE Oroville 15 0400PST 0 5 480K Wild/Forest Fire
1800PST

The Oregon Incident was a civilian caused fire, but was aided by strong and gusty winds, low humidities, and inaccessibility. Five injuries and zero deaths were reported. The fire was responsible for burning over 200 acres as well as destroying several homes and outbuildings. Fire suppression costs totaled \$20,000.

Shasta County

Bella Vista 16 0349PST 0 4 22.2M Wild/Forest Fire
20 0000PST

The Jones Incident was a civilian caused fire, but was aided by high winds and steep terrain. Four injuries and zero deaths were reported. The fire was responsible for burning over 26,000 acres as well as destroying 128 residences and 300 outbuildings. Fire suppression costs approached 4 million dollars.

Colusa County

30 SW Williams 16 0350PST 0 7 Wild/Forest Fire
24 0800PST

The 16 Incident was classified as arson, but was influenced by strong, gusty winds on the 16th. The fire was responsible for burning 40,000 acres. Fire suppression costs exceeded 2.5 million dollars. Seven injuries and zero deaths were reported.

Yuba County

40 NE Marysville 16 0400PST 0 6 3.5M Wild/Forest Fire
23 1800PST

Storm Data and Unusual Weather Phenomena

October 1999

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CALIFORNIA, North Central

The Pendola Incident was sparked by downed power lines, but was exacerbated by strong winds and steep terrain. Four injuries and zero deaths were reported. The fire destroyed 13 residences, 61 outbuildings, and 41 vehicles. Farm stock was also threatened, but not destroyed. Fire suppression costs exceeded 7 million dollars.

CALIFORNIA, Northeast

NONE REPORTED.

CALIFORNIA, Northwest

Humboldt County

10 E Hoopa	01	0000PST			0	0			Wild/Forest Fire
	28	1200PST							

Trinity County

5 N Denny	01	0000PST			0	0	1.3M		Wild/Forest Fire
	28	1200PST							

Megram Fire started by lightning in August, fanned by high winds in September was knocked down by rain in October so that firefighters could bring it under control. Dense smoke forced the evacuation of thousands of residents of the Hoopa and Willow Creek areas. Visibility was often less than 150 feet. Smoke and ashes spread over much of Northwest California. \$75 million was spent on firefighting, \$1.3 million in damage to commercial timber, \$16 million potential damage to fisheries and \$6.2 million needed for rehabilitation for a total cost of \$98.5 million. This was the fifth largest fire (acreage) in California history with 141,200 acres burned. No fatalities or injuries was directly caused by weather.

CAZ003>004

North Coast Interior - Upper Trinity River

	27	0900PST			0	0			High Wind (G57)
	28	0400PST							

CALIFORNIA, South Central

CAZ025

	06	1346PST			0	0			High Wind (G70)
		2000PST							

At 1346 PST Mojave Tower reported wind from 260 Degrees at 50 gusting to 70 Knots. A mountain wave was apparent on satellite imagery over the lee side of the Tehachapi Mountains and over the desert area. The wave clouds were still visible on satellite imagery at sunset.

CAZ022>024

	15	1200PST			0	0			Red Flag Fire Wx
	17	1430PST							

Several meso-net RAWS sites in the Southern Sierra Nevada reported relative humidity levels below 10 percent each afternoon from the 15th to the 17th.

CAZ020>021

	28	1341PST			0	0			Dust Storm
		1800PST							

Localized low visibilities over roadways near freshly plowed fields were reported by California Highway Patrol in the Central and Southern San Joaquin Valley. Post-frontal wind reached 25 to 35 MPH causing the raised dust as the relatively dry crop harvest period left many fields exposed at the same time in the Valley and Blowing Dust Advisories were issued.

CALIFORNIA, Southeast

NONE REPORTED.

CALIFORNIA, Southwest

San Diego County

2 SW Indian Spgs	01	0000PST			0	0			Wild/Forest Fire
to	02	1700PST							
4 SW Indian Spgs									

This wild fire began on September 30 and was not fully contained until October 2. Although 1600 acres of brush burned and threatened the Otay Lakes subdivision, no structures were affected.

Riverside County

2.9 SW Corona	01	0000PST			0	0			Wild/Forest Fire
	02	1700PST							

On September 30 this fire destroyed citrus groves and one house, damaged another five houses, and forced the evacuation of 200 others. Fire fighters were able to keep it from consuming another \$200 million in property damage. The fire was fully contained on October 2. A total of 450 acres burned.

Storm Data and Unusual Weather Phenomena

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CALIFORNIA, Southwest

San Diego County

6 E Rincon to 10.5 E Rincon	01 08	0000PST 0800PST			1	10	250K		Wild/Forest Fire
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This fire began on September 30 and wasn't fully contained until October 8. A total of 7,691 acres, one house, two trailers, and an out building were burned or destroyed. Campers and counselors at Camp Denver C. Fox and residents in Will Valley were evacuated. Ten fire fighters sustained minor injuries, and another died when a boulder dislodged by the fire struck him. The cost of fighting the fire was near \$3 million.
M20OU

San Diego County

4.7 E Valley Center to 5 E Valley Center	01 02	1140PST 1700PST			0	0			Wild/Forest Fire
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This was initially a one acre fire that was controlled on October 1, but it flared up on October 2 and quickly grew to 150 acres before it was brought under control again.

San Diego County

3 NE Campo to 2.5 E Campo	03 05	1300PST 1700PST			0	0	210K		Wild/Forest Fire
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A wild fire fanned by erratic winds quickly grew to over 4000 acres. Seven structures were destroyed: one house and 6 out buildings.

CAZ043

San Diego County Coasts

	03	1300PST			0	1			Heavy Surf
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A 27 year old man broke his neck while body-surfing at the Oceanside Municipal Pier.

CAZ060

Apple And Yucca Valleys

	06	1200PST 1300PST			0	0			Dust Storm
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Blowing dust and sand caused by west winds near 50 mph reduced visibilities to near zero.

CAZ048-057

San Bernardino County Valley/The Inland Empire - Santa Ana Mountains And Foothills

	07	0800PST 1200PST			0	0	40K		High Wind (G57)
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Santa Ana winds gusted to 43 mph through Cajon Pass. Blowing dust from San Bernardino to Ontario caused road closures along freeways due to poor visibilities. Several trees were snapped in San Bernardino.

San Diego County

3 E Campo to 1 S Campo	08 09	0900PST 1700PST			0	1			Wild/Forest Fire
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Hot dry weather and east winds near 20 mph rekindled a wild fire that had been brought under control a few days earlier. This fire straddling both side of the U.S.-Mexico border, burned an additional 1000 acres on the U.S. side before it was brought under control.

San Diego County

La Jolla to San Onofre	08 11	1215PST 1700PST			1	12			Rip Currents
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M21IW

Orange County

San Clemente to Newport Beach	09	0800PST 1700PST			0	0			Rip Currents
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Six to ten foot waves were responsible for one drowning, five people being washed overboard, a dozen injuries, and over 200 lifeguard rescues.

CAZ042-048>049-055>057

Orange County Coastal Plain - San Bernardino County Valley/The Inland Empire - Riverside County Valley/The Inland Empire - San Bernardino County Mountains - Riverside County Mountains - Santa Ana Mountains And Foothills

	17	0300PST 1415PST			0	0	30K		High Wind (G82)
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Riverside County

2 N Corona Muni Arpt to 2 E Corona Muni Arpt	17	0700PST 1700PST			0	0			Wild/Forest Fire
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Riverside County

3 NE Norco	17	0900PST 1700PST			0	0	97K		Wild/Forest Fire
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Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CALIFORNIA, Southwest

CAZ049 Riverside County Valley/The Inland Empire

Central Portion 17 1012PST 1100PST 0 0 **Dust Storm**

San Bernardino County

2 E Chino Arpt 17 1030PST 1800PST 0 0 **Wild/Forest Fire**

San Bernardino County

2 SW San Bernardino 17 1300PST 1700PST 0 0 550K **Wild/Forest Fire**

Riverside County

3 N Lake Elsinore to 2 N Lake Elsinore 17 1343PST 1600PST 0 0 **Wild/Forest Fire**

Santa Ana winds caused wind damage in Orange County, downing power lines in Yorba Linda and Huntington Beach. Wind gusts of 60 mph along the Santa Ana River Valley fanned a wild fire into 190 acres before it was brought under control. In San Bernardino, 40 mph wind gusts caused a fire to damage 11 houses and destroy a 12-plex apartment building before it was brought under control. Across the Inland Empire, other fires were prolonged by the gusty winds.

San Diego County

7 SE Boulevard 17 1025PST 1700PST 0 3 50K **Wild/Forest Fire**

A wild fire blew back on firefighters when the wind shifted. Three fire fighters were injured and their firetruck overcome by flames. Winds in the area had been from the east between 33 and 44 mph.

San Diego County

7 E San Onofre to 3 E San Onofre 20 1600PST 21 2100PST 0 0 **Wild/Forest Fire**

Dry conditions and moderate easterly breezes caused a wild fire to grow to 2200 acres on the U.S.M.C. Camp Pendleton weapons firing range before it was fully contained.

San Bernardino County

5 N Upland 22 1500PST 24 0000PST 0 0 **Wild/Forest Fire**

About 70 acres were burned in a brush fire.

CAZ043 San Diego County Coasts

23 1540PST 1710PST 0 0 20K **Fog**

Dense fog with visibility less than 10 feet moved rapidly onshore, causing a 50 foot sport fishing boat to miss the entrance to Oceanside Harbor and run aground. A rising tide allowed the boat to be towed back to sea within 90 minutes by a Harbor Police Rescue Boat. Damage was confined mainly to the propellers and shafts.

San Diego County

Warner Spgs 26 1314PST 27 0700PST 0 0 **Wild/Forest Fire**

A 400 acre brush fire occurred along Highway 79.

CAZ048 San Bernardino County Valley/The Inland Empire

29 0712PST 1244PST 0 0 **High Wind (G59)**

Orange County

Seal Beach 29 1200PST 1400PST 0 0 15K **Heavy Surf**

Tidal overflow occurred due to the combination of heavy surf and high tides.

San Bernardino County

6 NW Rialto to 5 NW Rialto 29 1300PST 30 0000PST 0 0 **Wild/Forest Fire**

Santa Ana winds gusting to 40 mph rapidly spread a wild fire through rocky terrain along Lytle Creek Wash. About 40 acres were burned.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CALIFORNIA, Southwest

CAZ057	Santa Ana Mountains And Foothills								
	30	0131PST 1131PST			0	0			High Wind (G69)
CAZ048	San Bernardino County Valley/The Inland Empire								
	30	0151PST 0914PST			0	0			High Wind (G50)
CAZ049	Riverside County Valley/The Inland Empire								
	30	0914PST			0	0	140K		Dust Storm

Santa Ana winds caused strong winds throughout the Inland Empire. Blowing dust along Interstate 215 near Perris caused visibilities to drop to zero, resulting in a 14 vehicle pileup.

CALIFORNIA, Upper

CAZ080>082	Western Siskiyou County - Central Siskiyou County - South Central Siskiyou County								
	15	1458PST			0	0			Extreme Cold
	16	0800PST							
	See below								
	A Frost Warning was issued for central and western Siskiyou county. Reported low temperatures were in the 30s, so frost probably did occur this morning.								
	Mt. Hebron (CAZ084) reported a low of 19 degrees (15 degrees below normal). This met the freeze warning criteria for the zone, but the very low temperatures did not appear to be widespread.								
CAZ080>082	Western Siskiyou County - Central Siskiyou County - South Central Siskiyou County								
	16	0505PST			0	0			Extreme Cold
	17	0800PST							
	See below								
	A Frost Warning was issued for central and western Siskiyou county. Reported low temperatures were in the 30s, so frost probably did occur this morning.								
CAZ081	Central Siskiyou County								
	27	1758PST			0	0			High Wind (G68)
	Spotter SY57 at Weed reported winds 40 MPH gusting to 68 MPH at 0510 PDT.								
	A wind advisory was issued for this zone at 1018 PDT on 10/27 and cancelled at 2048 PDT on 10/27. The above report was the only one that met High Wind Warning criteria. The wind advisory was probably sufficient for this event.								

CALIFORNIA, West South Central

CAZ040>041	Ventura County Coast - Los Angeles County Coasts Including Downtown Los Angeles								
	09	0430PST 1400PST			0	0			Heavy Surf
	Large northwest swell produced heavy surf along the beaches of Ventura and Los Angeles counties. Widespread surf of 6 to 8 feet was reported.								
CAZ034>035-040>041	San Luis Obispo County Central Coast - Santa Barbara County Central Coast - Ventura County Coast - Los Angeles County Coasts Including Downtown Los Angeles								
	28	0600PST			0	0			Heavy Surf
	29	1800PST							
	Large northwest swell generated heavy surf along west facing beaches of Central and Southern California. Along the coasts of San Luis Obispo and western Santa Barbara counties, widespread surf of 15 to 20 feet was reported. Along the beaches of Ventura and Los Angeles counties, widespread surf of 6 to 8 feet with local sets to 10 feet was reported.								

CALIFORNIA, Western

Santa Cruz County									
	28	1000PST			2	2	1M		Storm Surge
	29	0600PST							
	M18IW, F23IW								
Monterey County									
	29	1000PST			0	2			Storm Surge
	15 foot swell in association with a relatively high tide produced waves as high as 40 feet which broke through the seawall in Capitola and flooded low lying streets and businesses. A number of boats were ripped from their moorings and washed ashore or sunk. A 20 male surfer was drowned when he was caught in the huge surf. A number of other receive minor injuries. The Capitola Pier was closed for the first time anyone can remember because the waves were breaking up through the decking of the pier. The large swell had resulted from a storm that had stalled of the coast and built up a long fetch.								

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CALIFORNIA, Western

the second fatality was on the Lovers Point area of Pacific Grove. A young honeymoon couple were on the beach when a wave estimated at 25 feet swept them out to sea. the woman 23 perished but here husband survived with only minor injuries.

COLORADO, Central and Northeast

COZ035>041 Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - South Park - Eastern Larimer And Northwestern Weld Counties - Eastern Boulder County/Boulder And Vicinity - Denver Metropolitan Area - Eastern Douglas And Western Elbert Counties/Castle Rock And Vicinity

16	0500MST 1700MST				0	0	0	0	Heavy Snow
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Upslope conditions developed in and near the Front Range Foothills allowing for a brief period of heavy snow. Snowfall totals included: 10 inches at Pinewood Lake, 9 inches at Eldorado Springs and Larkspur, 8 inches at Genessee, Golden Gate Canyon, 3 miles northwest of Guffey, 11 miles southwest of Morrison and Littleton, 7 inches at Estes Park and 5 miles east-southeast of Nederland, 6 inches, 2.5 miles south of Buckhorn Mountain, Carter Lake and Louisville with 5 inches reported at Hourglass Lake. .

COZ035>036-039 Northern Front Range Foothills/Upper Laramie And Cache La Poudre River Basins - Southern Front Range Foothills/Clear Creek Basin - Eastern Boulder County/Boulder And Vicinity

18	1100MST 2300MST				0	0	0	0	Heavy Snow
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Heavy snow once again developed in and near the Front Range Foothills. Snowfall totals included: 7 inches, 8 miles north of Nederland, 6 inches at Boulder and 2.5 miles northeast of Estes Park, with 5 inches reported at Chief Hosa, 1 mile east of Buckhorn Mountain and Hourglass Lake.

COLORADO, East Central

NONE REPORTED.

COLORADO, South Central and Southeast

El Paso County

5 ENE Colorado Spgs to 5 E Colorado Spgs	07	1315MST 1325MST			0	0			Hail (0.75)
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COZ065>067-070-072-074>075 Northern Sangre De Cristo Mountains - Southern Sangre De Cristo Mountains - Teller County/Rampart Range/Pikes Peak - Wet Mountains - Northern El Paso County/Monument Ridge - Upper Huerfano River Basin/Walsenburg And Vicinity - Upper Purgatoire River Basin/Trinidad And Vicinity

16	1400MST				0	0			Winter Storm
17	0400MST								

A strong upper level low pressure system moved through southwest Colorado and caused deep moisture and upslope winds, bringing heavy snow in the southeast mountains and adjacent plains. Snow amounts ranged from 1 inch to 6.5 inches over northern El Paso county, with Monument receiving the 6.5 snow total. Three to 8 inches of snow was tallied in Teller county, with areas near Cripple Creek receiving the 8 inch snow total. In Huerfano county, Walsenburg received 7 inches of snow while Cuchara reported 8.3 inches of snow. Aguilar in Las Animas county received 6 inches of snow. The highest snow amounts from this event fell in the Wet Mountains where Rye reported 6 inches of snow...Beulah had 7 inches of snow and Aspen Acres Campground, located near San Isabel, received 9.5 inches of snow.

COZ066>067-070-073>074 Southern Sangre De Cristo Mountains - Teller County/Rampart Range/Pikes Peak - Wet Mountains - Pueblo And Eastern Fremont Counties/Pueblo And Vicinity - Upper Huerfano River Basin/Walsenburg And Vicinity

18	1400MST				0	0			Winter Storm
19	0500MST								

Another early season snow event occurred, as a strong upper level system produced snow amounts of 2 to 10 inches over several counties with an isolated snow report of 13 inches. A snow amount of 3.5 inches was reported 5 miles north of Canon City in Fremont county, while Divide and Woodland Park in Teller county each received 4 inches of snow. In the Wet Mountains, Aspen Acres Campground located near San Isabel recorded 6 to 7 inches of snow, while Rye received 8 to 9 inches of snow. Six inches of snow occurred at Walsenburg in Huerfano county. La Veta Pass tallied about 7 inches of the white stuff. The highest snow totals of the event occurred over parts of the southern Sangre de Cristo Mountains where 11 inches was measured 18 miles west southwest of Aguilar and 13 inches of snow graced the community of Cuchara.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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COLORADO, South Central and Southeast

COZ058>059-066 Leadville And Vicinity - W Lake / W Chaffee County - Southern Sangre De Cristo Mountains

28	2300MST				0	0			Heavy Snow
29	1600MST								

A fast moving Pacific storm system caused periods of heavy snow over parts of Lake, Chaffee, and Huerfano counties. In Lake county 3 inches of snow was noted at Leadville while 6 inches fell at Climax. In excess of 8 inches fell in the high country of western Lake and western Chaffee counties. In Huerfano county 4 to 6 inches of snow fell in a 4 hour period just northeast of La Veta, while 8 inches of snow occurred in slightly over 2 hours at Cuchara.

COLORADO, West

NONE REPORTED.

CONNECTICUT, Northeast

CTZ002 Hartford

14	0900EST				0	0			Strong Wind
	1900EST								

Strong northwest winds, gusting to about 50 mph, buffeted Hartford County in the wake of a strong cold front. The wind gusts brought wires down in Farmington, and downed tree branches and wires in Bloomfield.

CONNECTICUT, Northwest

NONE REPORTED.

CONNECTICUT, Southern

NONE REPORTED.

DELAWARE

Sussex County

Countywide

17	1300EST				0	0			Heavy Rain
18	0100EST								

Heavy rain associated with Hurricane Irene fell across Sussex County Delaware from the afternoon of the 17th through the very early morning of the 18th. The hurricane itself passed well southeast of the state, about 225 miles offshore during the morning of the 18th. The heaviest rain fell in the southeast part of the county east of a Laurel to Lewes line. Storm totals ranged from around an inch along the Kent County border to nearly 4 inches around Selbyville near the Maryland border. Some poor drainage flooding occurred, but no serious damage or injuries were reported. Storm totals included 3.49 inches in Ocean City (MD), 2.49 inches in Salisbury (MD), and 2.34 inches in Georgetown.

DISTRICT OF COLUMBIA

NONE REPORTED.

FLORIDA, East Central

FLZ041-047-054- Volusia - Brevard - Indian River - St. Lucie - Martin

059-064

15	2000EST				0	0	51M		Hurricane
16	1700EST								

Minimal Hurricane Irene moved northeast from the Florida Keys across south Florida and emerged over the Atlantic near Ft. Pierce. Even though the storm was classified a category one hurricane, no sustained hurricane force winds were observed in east central Florida. Winds gusted from 60 to 70 mph over coastal locations from Ft. Pierce to Daytona Beach.

In Martin and St. Lucie counties the greatest impact from the storm was flooding. From 5 to 9 inches of rain fell over the area flooding 300 homes. About 50 homes had major wind damage and thousands of trees were blown down.

In Volusia, Brevard and Indian River counties hundreds of homes received minor wind damage and about 50 residences were seriously damaged. The hardest hit areas were beach front communities. Many houses and high rise hotels suffered roof damage and damage from wind driven rain. A barge broke free during high winds and damaged the causeway bridge on US Highway 528 near Cape Canaveral. Substantial beach erosion was reported along the entire coast. From 4 to 10 feet of beach front was lost in most areas with damage estimated in the millions of dollars in each county.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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FLORIDA, Extreme Southern

Monroe County

Ramrod	01	1624EST 1636EST			0	0			Waterspout
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Waterspout occurred 2 miles north of Sugarloaf Key.

Monroe County

Tavernier	06	1530EST 1543EST			0	0			Waterspout
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Waterspout occurred 2 miles north of Tavernier.

FLZ076>078

Monroe/Upper Keys - Monroe/Middle Keys - Monroe/Lower Keys

14	2100EST				0	0	13.5M		Hurricane
15	2100EST				0	0			

Monroe County

(Nqx)Key West Nas	15	0515EST 0518EST	0.5	20	0	0	0		Tornado (F0)
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The tornado moved through the south side of Boca Chica Key, just south of the NAS runway. It moved through a non-residential area causing little damage.

FLZ076-078

Monroe/Upper Keys - Monroe/Lower Keys

15	0900EST 1800EST				0	0	0		Flood
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U.S. Highway 1 was closed at mile marker 75 due to freshwater flooding due to heavy rains.

Monroe County

Craig	15	1545EST 1555EST	1	50	0	0	0		Tornado (F1)
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The tornado moved onshore 2 miles northeast of Craig Key in the Coloosa Cove area (Mile Marker 73). Some roofs were blown off houses and there was moderate tree damage.

Monroe County

Marathon	17	1557EST 1636EST			0	0			Waterspout
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Numerous waterspouts were reported by storm spotters from 1 to 4 miles south and southeast of Marathon

FLORIDA, Northeastern

FLZ038

Flagler

16	1500EST				0	0	600K		Hurricane
17	0400EST				0	0			

Hurricane Irene - Three single family homes and one multi-family structure received major damage. 167 single family homes, 6 multi-family and 18 mobile and 18 businesses with minor damage. Numerous reports of trees and power lines blown down. Minor flooding occurred in the northern portion of the county near Marineland. Minor beach erosion. A 74 mph wind gust was reported between 16/2000 and 16/2030 UTC by the Flagler Vol. Fire Department.

FLZ033

St. Johns

16	1700EST				0	0	300K		Hurricane
17	1800EST				0	0			

Hurricane Irene - Minor beach erosion and flooding. Numerous reports of tree and power lines blown down. Max wind gust - 77 mph, St. Augustine (SAUF1) at 170200 UTC.

FLZ025

Duval

16	1800EST				0	0	300K		Hurricane
17	0600EST				0	0			

Hurricane Irene - Numerous reports of trees and power lines blown down. Max wind gust - 55 mph, Mayport Navy Base at 170200 UTC. Minor beach erosion.

FLORIDA, Northwest

NONE REPORTED.

FLORIDA, Southern

Palm Beach

County

5 E Palm Beach Intl Arpt	04	1520EST			0	0			Waterspout
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Police sighted a waterspout in the Atlantic.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage	Property	Crops	Character of Storm
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FLORIDA, Southern

Palm Beach County

2 E Jupiter	05	1500EST			0	0					Waterspout
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A police officer reported a waterspout in the Atlantic.

Dade County

1 E Miami Beach	07	1240EST			0	0					Waterspout
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The public reported a waterspout in the Atlantic just east of the Miami Harbor Entrance.

Dade County

Miami Beach to Sunny Is	08	1300EST			0	2					Rip Currents
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A mother and daughter were caught in a rip current in the Atlantic off Sunny Isles. Three rescuers saved the couple, but the daughter and one of the rescuers were taken to the hospital. The wind was east at 20 mph.

Dade County

Miami Beach	09	1425EST			1	0					Rip Currents
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A Pennsylvania tourist drowned after being caught in a rip current in the Atlantic near 12th Street. Winds were east around 20 mph. M41IW

Palm Beach County

2 E Delray Beach	10	1505EST			0	0					Waterspout
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A SKYWARN spotter sighted a waterspout in the Atlantic.

Dade County

Miami Beach	10	1530EST			1	0					Rip Currents
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A retiree drowned in a rip current behind his condominium near 60th Street. Winds were east at 15 to 20 mph.. M64IW

Palm Beach County

3 E Boca Raton	11	1240EST			0	0					Waterspout
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A SKYWARN spotter sighted a waterspout in the Atlantic.

Collier County

1 W Marco	13	1405EST			0	0					Waterspout
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A waterspout was sighted in the Gulf of Mexico one mile west of Capri Pass.

FLZ068-072-074

Coastal Palm Beach - Coastal Broward - Coastal Dade

14	0700EST				0	4	262M	338M	Hurricane
15	2300EST								

After lingering as a broad area of low pressure in the western Caribbean Sea for four days, a tropical depression formed just after midnight EDT on October 13 and became tropical storm Irene in the northwest Caribbean Sea later that morning. Irene moved north across western Cuba on October 14 and strengthened to hurricane intensity early on October 15 in the Straits of Florida. It then made its first landfall in south Florida in the lower Florida Keys around 9 AM EDT, October 15. After crossing Florida Bay the center of Irene made landfall on the peninsula near Cape Sable around 4 PM EDT, October 15 as a Category One intensity hurricane. It moved northeast across central Miami-Dade and Broward counties before exiting into the Atlantic just after midnight EDT on October 16 near Jupiter in northeast Palm Beach County.

Heavy rains and sustained winds of tropical storm force caused widespread flooding and power outages in the metropolitan areas of Miami-Dade, Broward and Palm Beach counties. The effects were similar, although somewhat more widespread, than those experienced in tropical storm Gordon in November 1994 and were reminiscent of the wet hurricanes in the 1930s and 1940s.

Rainfall totals in southeast Florida ranged from 6 to 17 inches with many areas getting 10 to 15 inches. The greatest reliable amount reported was 17.45 inches at Boynton Beach. The highest sustained wind over land was 60 mph at Miami Beach with many readings from 40 to 55 mph. Fowey Rocks Light reported sustained winds of 66 mph while the Miami NWS doppler radar estimated areas of sustained hurricane force winds in the Atlantic Ocean just off the southeast Florida coast. Among the highest recorded gusts were readings of 93 mph near Belle Glade, 85 mph at Homestead Air Reserve Base, 84 mph at Fowey Rocks Light, 74 mph at Turkey Point nuclear power plant and 70 mph at Miami International Airport. The lowest barometric pressure on the south Florida peninsula was 989.9 mb at Opa Locka Airport. Storm surge and beach erosion were minimal.

Four tornadoes touched down in Broward and Palm Beach counties, injuring 3 persons. Several other areas of localized wind damage were reported, especially near the southeast shore of Lake Okeechobee, and were likely attributable to convective downbursts.

There were no direct deaths from Irene, but eight persons died in the aftermath. Five persons were electrocuted by downed power lines, including three persons from one family. Three other persons drowned in vehicle-related accidents. Damage in southeast Florida, mainly from flooding is estimated near \$600 million which includes \$335 million in agricultural losses. An estimated

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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FLORIDA, Southern

700,000 customers lost electricity. Flooding in a few residential areas lasted for a week displacing several hundred persons and isolating thousands more.

Other long-term ecological repercussions may be experienced from the flooding rains such as the effects of high water on Everglade's hammocks, and the effects of excessive fresh-water runoff on estuaries.

Broward County

Plantation	14	1730EST	0.1	10	0	1	20K		Tornado (F0)
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A brief tornado touched down at the Broward Mall damaging two vehicles and injuring one person.

Dade County

East Portion	15	1000EST			0	0	100M	200M	Flash Flood
	16	1200EST							

Broward County

East Portion	15	1100EST			0	0	45M	25M	Flash Flood
	16	1200EST							

Palm Beach County

East Portion	15	1300EST			0	0	60M	65M	Flash Flood
	16	1300EST							

Widespread flooding from hurricane Irene inundated most of the metropolitan areas of Miami-Dade, Broward and Palm Beach counties.

Broward County

Ft Lauderdale	15	1600EST 1605EST	1	20	0	3	300K		Tornado (F1)
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A tornadic waterspout moved ashore on Fort Lauderdale Beach. The tornado overturned a lifeguard stand and passed over a high-rise condominium. The tornado blew out a plate-glass window at the Elbow Room Bar injuring eight patrons, two of whom were treated at the hospital. The tornado overturned a vehicle and heavily damaged a retail establishment on Los Olas Boulevard before lifting..

Palm Beach County

Delray Beach	15	1630EST 1640EST	2	20	0	0	100K		Tornado (F1)
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A tornado touched down in the Tropic Isles subdivision, crossed I-95, blowing over a semi-tractor trailer and lifted near Linton Boulevard and Abbey Road. Several structures suffered slight damage.

Broward County

20 E Ft Lauderdale	19	1040EST			0	0			Funnel Cloud
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A pilot reported several funnel clouds over the Atlantic.

Palm Beach County

8 WNW Palm Beach Gardens	19	2230EST			0	0			Flash Flood
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Emergency Management reported a levee surrounding the Corbett Wildlife Refuge had several breaks that caused flooding of nearby property.

FLORIDA, West Central

FLZ052-056>057-061>062-065 Polk - Hardee - Highlands - De Soto - Charlotte - Lee

	15	1200EST			0	0	0	0	Hurricane
	16	1500EST							

The westernmost bands of Hurricane Irene produced occasional tropical storm force wind gusts across the interior counties of central Florida during the evening of October 15th and early morning of the 16th with no reported fatalities, injuries or damage.

Maximum wind gust observed was 42 mph from the northeast recorded at the automated surface observing site (ASOS) in Winter Haven of Polk County, Florida at 1533 EST on the 15th. Maximum 24 hour rainfall was .31 inches recorded at Page Field in Ft Myers of Lee County, Florida ending at 0800 EST on the 16th. Lowest sea-level pressure observed was 1000.0 mb at Regional Southwest Airport in Ft Myers of Lee County, Florida at 1917EST on the 15th.

FLORIDA, West Panhandle

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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GEORGIA, East Central

NONE REPORTED.

GEORGIA, Lower

NONE REPORTED.

GEORGIA, North and Central

NONE REPORTED.

GEORGIA, Northeast

**GAZ010-017>018- Rabun - Habersham - Stephens - Franklin - Hart - Elbert
026-028>029**

01	0000EST								
31	2359EST			0	0				Drought

The return of some rainfall as well as lower evaporation rates due to the change of seasons, resulted in the drought easing somewhat. Drought classifications were lowered in some cases, and some places lifted water restrictions. However, the drought had not ended by the end of the month.

GEORGIA, Southeast

NONE REPORTED.

GEORGIA, Southwest

NONE REPORTED.

GEORGIA, West Central

NONE REPORTED.

HAWAII

HIZ007>008

West Hawaii Including Leeward Kohala And Kona - South Hawaii Including Kau

01	0000HST								
31	2359HST			0	0				Drought

Although the 1999-2000 cool season for the Hawaiian Islands kicked off dramatically during October with the development of a large Kona storm to the northwest of the island chain, sections of the southern and western parts of the island of Hawaii remained drought-stricken. The storm itself brought periods of heavy rainfall and varying degrees of flooding across the state from 18 through 21 October. Flash flood warnings were issued for portions of Kauai (18 and 19 October) and Oahu (19 October), where two to five inches of rain fell within a 24-hour period.

Conditions prior to and after the Kona storm mainly involved moderate trade winds over the state. Shower areas embedded within this trade flow brought intermittent light to moderate rains to all the islands with daily totals mostly under one inch.

Island of Hawaii

Despite the presence of the Kona storm, October rainfall totals for the island of Hawaii were relatively modest. Only two sites, Kamakoa and Waiaha, reported above average rainfall for the month. The two sites in the Kau District, Kapapala Ranch and Pahala, were close to average at 90 and 92 percent, respectively. The highest four-day total from the Kona storm was 3.73 inches at Kapapala Ranch, most of which fell on 20 October (3.57 inches). The second highest total was 3.67 inches at Waiaha. Most of the remaining sites reported less than two-inch storm totals.

An overall drying trend that started in mid-April 1999 continues for the windward side of the island. Back in April, seven out of eight sites had year-to-date totals above average. Now, only two windward sites (Mt. View and Glenwood) have year-to-date totals above average. Conversely, sites in the Kona and Kau Districts have been showing improvement, albeit slowly.

The following list contains rainfall statistics for selected locations from the island of Hawaii. The first column is the observed rainfall for October. The second column is the 30-year average for that location, while the third column lists the percent of average rainfall for the month. The fourth and fifth columns are the year-to-date total and the percent of average, respectively.

	Oct 99	Avg.	%Avg.	YTD	%Avg.
Island of Hawaii					

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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HAWAII

Hilo Airport			3.61	9.6	38		91.43		89
Pahala			3.88	4.2	92		17.46		40
Honaunau			4.41	5.2	85		26.03		45
Kamuela (Upper)			3.25	3.7	88		48.13		103
Glenwood			8.82	10.2	86		157.63		121
Laupahoehoe			3.04	9.3	33		79.37		65

At the beginning of October, the state Department of Land and Natural Resources went ahead and closed portions of the Mauna Kea Forest Reserve, all of the Kaohe Game Management Area, and all roads at Pu'u La'au and Skyline on the Big Island of Hawaii. This had been planned at the end of September. Drought conditions had created such dry vegetation that state officials decided to close the affected areas to lessen the chance of brush fires.

HIZ001>003-005>008

Kauai - Oahu - Maui - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona - South Hawaii Including Kau

05 1300HST 0 0 High Surf
07 1700HST

Storm low southeast of New Zealand produced surf of 4 to 8 feet along the south shores of all the Hawaiian Islands. However, a few rogue waves, in combination with high tide, generated surf as high as 12 feet that washed inland and affected Kihei, Maui, in the afternoon of October 5th. Surf washed over roads and parking lots. Ocean water also flooded three ground-floor units and the lobby of the Kihei Beach Resort. No estimates of damage were available.

Hawaii County

13 NNE Kailua
Kona

07 1500HST 0 0 Wild/Forest Fire
10 2100HST

A brush fire of three-foot high fountain grass burned 3000 acres over a three-day period in a remote area of the Big Island. No injuries were reported, and no structures were damaged.

Kauai County

Anahola to
Kapaa

18 1800HST 0 0 Urban/Sml Stream Fld
2100HST

Kauai County

Hanapepe to
Lihue

19 0030HST 0 0 Urban/Sml Stream Fld
0330HST

Honolulu County

Waianae to
Pearl City

19 0200HST 0 0 Urban/Sml Stream Fld
0500HST

Honolulu County

Waianae to
Hawaii Kai

19 0445HST 0 0 Urban/Sml Stream Fld
0800HST

Honolulu County

Makaha to
Nanakuli

19 1225HST 0 0 Urban/Sml Stream Fld
1525HST

Honolulu County

Haleiwa to
Nanakuli

19 1530HST 0 0 Urban/Sml Stream Fld
1830HST

HIZ001>007

Kauai - Oahu - Maui - North And East Hawaii Including Windward Kohala / Hamakua / Hilo / Puna - Molokai - Lanai - West Hawaii Including Leeward Kohala And Kona

19 1600HST 0 0 High Surf
21 0700HST

Gale low northwest of Kauai produced surf of 6 to 12 feet along the north and west shores of all the Hawaiian Islands.

Hawaii County

Pahoa to
Kailua Kona

20 0945HST 0 0 Flood
1845HST

Kauai County

Kilauea to
Kalaheo

20 1025HST 0 0 Urban/Sml Stream Fld
1230HST

Police reported flooding along Route 51 north of the Lihue Airport at 10:25 AM, 45 minutes after the Lihue weather office had issued an urban and small stream flood advisory.

Maui County

Kaunakakai to
Kahului

20 1120HST 0 0 Urban/Sml Stream Fld
1740HST

To sum up this event and the preceding events of 18 to 20 October, flash flood watches and warnings, and urban and small stream

Storm Data and Unusual Weather Phenomena

October 1999

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HAWAII

flood advisories had been up for all or portions of Kauai, Oahu, Maui County, and the island of Hawaii for the two-day period as a Kona low to the northwest of Kauai kept the weather unstable. Two to five inches of rain fell on parts of the state in a 24-hour period over the two days. There were reports of ponding and flooding of roadways, minor rock and land slides, and occasional power outages around the island chain. However, there were no reports of serious injuries or significant property damage.

Maui County

1 NE Kipahulu

20	1400HST 1630HST				0	0			Flash Flood
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A drenching rainfall in Haleakala National Park in the afternoon of 20 October caused the usually placid Palikea Stream to rise by an estimated 15 to 20 feet within a minute. Twelve tourists who had been swimming in the lower pools of the Palikea escaped injury by clinging to the sides of the cliffs on each side of the raging stream. The US Coast Guard, a Maui County rescue team, police, and members of the public helped get the visitors to safety.

On the island of Maui, Makena Road near Makena Landing became washed out in the early morning hours of 20 October. Besides this event and the stranding of the twelve tourists, Piilani Highway near Kaupo became intermittently washed out by heavy rains. Rock and land slides occurred near Boy Scout, Camp Maluhia, and Kahakuloa. Rock slides and road flooding affected Piilani Highway near Kanaio, while minor street flooding became a nuisance in Kahului.

IDAHO, Extreme Southeast

NONE REPORTED.

IDAHO, North

NONE REPORTED.

IDAHO, Northwest

IDZ001-004

Northern Panhandle - Central Panhandle Mountains

27	1800PST				0	0			Heavy Snow
29	2000PST								

Snow amounts of 4 inches were reported in the mountains of north Idaho above 5000 feet.

Boundary County

Bonnors Ferry

31	0800PST 0830PST				0	0	30K		Tstm Wind/Hail
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Instability thunderstorms developed over northern Idaho and caused winds up to 50 mph and pea size hail. One of these storm caused a roof to be ripped off of a building in Bonnors Ferry.

IDAHO, Southeast

NONE REPORTED.

IDAHO, Southwest

NONE REPORTED.

ILLINOIS, Central

NONE REPORTED.

ILLINOIS, Northeast

NONE REPORTED.

ILLINOIS, Northwest

NONE REPORTED.

ILLINOIS, South

**ILZ075>078-
080>094**

**Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson -
Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac**

01	0001CST				0	0			Drought
31	2359CST								

The moderate to severe summer-long drought conditions were greatly alleviated by heavy rain on October 8th and 9th. Rainfall totals were mainly between 2 and 4 inches during a 24-hour time frame. Even though the rain was too late for most crops, it replenished

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ILLINOIS, South

ponds used for watering cattle. Bans on open burning were lifted after the rain fell. No rain fell during the rest of the month, which renewed drought concerns by the end of October.

**ILZ075>078-
080>094**

**Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson -
Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac**

01	0001CST				0	0			Drought
31	2359CST								

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ILLINOIS, Southwest

NONE REPORTED.

INDIANA, Central

NONE REPORTED.

INDIANA, Northeast

St. Joseph County

South Bend	13	0843EST			0	0			Hail (0.75)
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Elkhart County

Wakarusa	13	0913EST			0	0			Hail (0.75)
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Steuben County

12 NE Angola	13	0951EST			0	0			Hail (0.75)
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INDIANA, Northwest

NONE REPORTED.

INDIANA, South Central

NONE REPORTED.

INDIANA, Southeast

NONE REPORTED.

INDIANA, Southwest

**INZ081>082-
085>088**

Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer

01	0001CST				0	0			Drought
31	2359CST								

The moderate to severe summer-long drought was greatly alleviated by heavy rain on October 8th and 9th, when 2 to 4 inches of rain fell during a 24-hour period. Unfortunately, no more rain occurred during the rest of October, which rekindled drought concerns. Before the heavy rain, a couple of wildland fires occurred in Spencer County during the first week of October. They were both field fires and were under control within several hours. The governor of Indiana lifted the burning ban once rainy conditions began.

**INZ081>082-
085>088**

Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer

01	0001CST				0	0			Drought
31	2359CST								

The moderate to severe summer-long drought was greatly alleviated by heavy rain on October 8th and 9th, when 2 to 4 inches of rain fell during a 24-hour period. Unfortunately, no more rain occurred during the rest of October, which rekindled drought concerns. Before the heavy rain, a couple of wildland fires occurred in Spencer County during the first week of October. They were both field fires and were under control within several hours. The governor of Indiana lifted the burning ban once rainy conditions began.

IOWA, Central

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, East Central and Southeast

NONE REPORTED.

IOWA, Northeast

NONE REPORTED.

IOWA, Northwest

NONE REPORTED.

IOWA, Southwest

NONE REPORTED.

KANSAS, East

NONE REPORTED.

KANSAS, Extreme Southeast

NONE REPORTED.

KANSAS, North Central

NONE REPORTED.

KANSAS, Northeast

NONE REPORTED.

KANSAS, Northwest

NONE REPORTED.

KANSAS, Southeast

NONE REPORTED.

KANSAS, Southwest

NONE REPORTED.

KENTUCKY, Central

NONE REPORTED.

KENTUCKY, Eastern

Fleming County

Ewing	13	1721EST		0	0	3K	0	Thunderstorm Wind
Strong winds brought several power lines down.								

Fleming County

Marthas Mill	13	1724EST		0	0	6K	0	Thunderstorm Wind
Strong winds brought down three telephone poles and several trees.								

Fleming County

Flemingsburg	13	1730EST		0	0	0	0	Thunderstorm Wind
Several trees blown down by strong winds.								

Fleming County

Goddard	13	1741EST		0	0	3K	0	Thunderstorm Wind
Power lines were brought down by strong winds.								

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KENTUCKY, Northeast

KYZ101>103-105 Greenup - Carter - Boyd - Lawrence

01	0000EST				0	0			Drought
31	2300EST								

The drought severity eased during October as 2.5 to 3.5" of rain fell. These amounts were slightly above normal levels. Surface flow in streams increased, but ground water continued low.

Greenup County

2 E South Shore to 2 SE South Shore	13	1725EST			0	0			Hail (0.75)
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Dime size hail fell along Route 23 around Siloam.

KENTUCKY, Northern

Boone County

Walton	13	1542EST 1545EST			0	0	3K		Thunderstorm Wind (G50)
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Trees were blown down over Stevenson Mill Road.

Lewis County

Tannery	13	1720EST 1723EST			0	0	25K		Thunderstorm Wind (G60)
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Thunderstorm winds caused extensive damage to a residence.

KENTUCKY, Southwest

KYZ001>022 Fulton - Hickman - Carlisle - Ballard - Mcracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson - Daviess - Mclean - Muhlenberg - Todd

01	0001CST				0	0			Drought
31	2359CST								

The severe summer-long drought was greatly alleviated by heavy rain on October 8th and 9th. During a 36-hour period, anywhere from 3 to 6 inches of rain soaked the ground. Paducah received 3.78 inches of rain, and the highest reported total was 6.54 inches at Columbus, along the Mississippi River. The rain came too late for most crops and gardens, but was timely for farmers sowing wheat and other small grains. It also began to replenish ponds used to water cattle. Bans on open burning were lifted as a result of the soaking rain. Before the rain arrived, a major field fire occurred just east of Paducah, between Reidland and Calvert City. The fire, which started along railroad tracks, threatened some railroad cars used to carry hazardous chemicals. With assistance from eleven fire departments, the fire was contained before it reached any structures or vehicles. After the heavy rain on the 8th and 9th, no rain fell during the rest of the month, which renewed drought concerns.

KYZ001>022 Fulton - Hickman - Carlisle - Ballard - Mcracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson - Daviess - Mclean - Muhlenberg - Todd

01	0001CST				0	0			Drought
31	2359CST								

The severe summer-long drought was greatly alleviated by heavy rain on October 8th and 9th. During a 36-hour period, anywhere from 3 to 6 inches of rain soaked the ground. Paducah received 3.78 inches of rain, and the highest reported total was 6.54 inches at Columbus, along the Mississippi River. The rain came too late for most crops and gardens, but was timely for farmers sowing wheat and other small grains. It also began to replenish ponds used to water cattle. Bans on open burning were lifted as a result of the soaking rain. Before the rain arrived, a major field fire occurred just east of Paducah, between Reidland and Calvert City. The fire, which started along railroad tracks, threatened some railroad cars used to carry hazardous chemicals. With assistance from eleven fire departments, the fire was contained before it reached any structures or vehicles. After the heavy rain on the 8th and 9th, no rain fell during the rest of the month, which renewed drought concerns.

LOUISIANA, Northeast

NONE REPORTED.

LOUISIANA, Northwest

NONE REPORTED.

LOUISIANA, Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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LOUISIANA, Southwest

St. Mary Parish

Morgan City	09	0100CST 0400CST			0	0	5K		Flood
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Over eight inches of rain caused several side streets to be flooded and impassable.

MAINE, North

**MEZ001>002-
004>006-010>011-
015>017-029>030**

**Northwest Aroostook - Northeast Aroostook - Northern Piscataquis - Northern Penobscot -
Southeast Aroostook - Southern Piscataquis - Central Penobscot - Southern Penobscot - Interior
Hancock - Interior Washington - Coastal Hancock - Coastal Washington**

14	1200EST				0	0			High Wind (G47)
15	0800EST								

Low pressure tracking across New England rapidly intensified over the Gulf of Maine during the morning of the 14th...then lifted quickly into the Maritime Provinces. In its wake...high pressure began building across the region producing a very tight pressure gradient.

Strong west/northwest winds developed across the region in the wake of the exiting low. Sustained winds of 25 to 35 mph (20 to 30 kt) were common across all of Northern and Eastern Maine...with wind gusts in excess of 50 mph (43 kt) over land. The peak wind reported over land was 54 mph (47 kts) at Greenville in Southern Piscataquis County. Even stronger winds were reported over the Gulf of Maine where winds gusted between 60 and 70 mph (50 to 60 kts).

Numerous tree limbs were snapped off regionwide...along with several trees entirely uprooted. At least 4 trees were uprooted around the community of East Millinocket. One tree fell against a house damaging the roof and siding. Another tree toppled across Grindstone Road...near East Millinocket...closing it for a time. Trees were also toppled in the Bangor and Plymouth areas of Southern Penobscot County. The winds and falling trees damaged the roof and siding of several structures in these areas as well.

The falling trees...branches and strong winds combined to bring down many power lines and utility poles. Power outages were reported regionwide. The entire city of Brewer lost power for a time during the afternoon of the 14th. At various times...nearly 5500 people were without power in the Dover-Foxcroft area and nearly 7000 were without power in the area from Milo...to Lincoln...to Orono. Extensive power outages were also reported in the Moosehead Lake Region of Piscataquis County.

The strong winds helped usher colder air across the region...turning the precipitation to snow over the mountains and northern areas. Snowfall totals of 1 to 3 inches were reported across Northeast Maine...with up to 6 inches reported over the higher terrain of Piscataquis County and the Allagash Wilderness Area.

MAINE, South

MEZ007>009

Northern Oxford - Northern Franklin - Central Somerset

04	0700EST 1600EST				0	0			Early Snowfall
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Low pressure moving eastward through the mid-Atlantic States brought an early season snowfall to the northwestern slopes of the Maine Mountains. Up to 5 inches of snow fell in the area. The wet snow caused trees and tree limbs to fall and caused several accidents.

**MEZ007>009-
012>014-018>028**

**Northern Oxford - Northern Franklin - Central Somerset - Southern Oxford - Southern Franklin -
Southern Somerset - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior
Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo**

14	1000EST 1700EST				0	0			Strong Winds
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Strong, gusty, northwest winds developed across southern and western Maine on the west side of an intensifying low pressure system as it moved across New England. The wind downed trees and limbs onto power lines causing scattered power outages. Approximately 28,000 customers were affected by the outages. Peak wind gusts were 46 mph at Portland, 44 mph at Brunswick, and 43 mph at Augusta and Rockland.

MARYLAND, Central

MDZ002>003

Allegany - Washington

01	0000EST				0	0			Drought
12	2359EST								

The drought that affected much of the region since the summer of 1998 finally came to an end in Allegany and Washington Counties. At the beginning of the month, western Maryland was still in a moderate drought. From the 1st through the 11th, over 2 inches of much needed rain fell, bringing an end to the water shortage. The ban on open burning was finally lifted.

MARYLAND, Northeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MARYLAND, South

NONE REPORTED.

MARYLAND, West

NONE REPORTED.

MASSACHUSETTS, Central and East

Dukes County

Gay Head	06	1742EST			0	0			Waterspout
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A pilot reported a waterspout just off Gay Head. No damage was reported.

MAZ004>007-010-012>024 Northern Worcester - Western Middlesex - Western Essex - Eastern Essex - Eastern Hampshire - Southern Worcester - Western Norfolk - Southeast Middlesex - Suffolk - Eastern Norfolk - Northern Bristol - Western Plymouth - Eastern Plymouth - Southern Bristol - Southern Plymouth - Barnstable - Dukes - Nantucket

14	0100EST	2300EST			0	0			Strong Wind
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Strong winds buffeted much of central and eastern Massachusetts. Isolated gusts of 45 to 50 mph from the south occurred ahead of a strong cold front just after midnight. Strong winds were more widespread during the daylight hours, as northwest winds behind a rapidly intensifying low pressure system in the Gulf of Maine gusted to near 50 mph. There were scattered reports of downed tree branches and power lines, particularly in and around Boston. Flights at Logan International Airport in Boston were delayed up to 3 hours as a result of the strong winds. About 1,500 customers were left without power.

Barnstable County

Chatham	18	0200EST	2200EST		0	0			Heavy Rain
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Dukes County

Marthas Vineyard Arp	18	0200EST	2200EST		0	0			Heavy Rain
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Nantucket County

(Ack)Nantucket Mem A	18	0200EST	2200EST		0	0			Heavy Rain
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Plymouth County

Mattapoissett	18	0200EST	2200EST		0	0			Heavy Rain
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MAZ020>023 Southern Bristol - Southern Plymouth - Barnstable - Dukes

18	1000EST	1800EST			0	2			Strong Wind
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MAZ024

Nantucket	18	1237EST			0	0			High Wind (G52)
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The remnants of Hurricane Irene combined with an approaching cold front to bring heavy rain and strong winds to the south coast, Cape Cod, and the Islands. Rainfall averaged 2 to 4 inches over most of these areas, but as much as 5.37 inches fell on Nantucket, where a wind gust to 60 mph was also reported. Gusts elsewhere ranged between 45 and 55 mph. There were many reports of downed tree branches and power lines. Two people received minor injuries when a tree fell on their car.

MASSACHUSETTS, West

NONE REPORTED.

MICHIGAN, East

Sanilac County

Croswell	13	1020EST			0	0			Hail (1.00)
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Macomb County

Romeo	13	1030EST			0	0			Hail (0.75)
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Oakland County

6 N Rochester Hills	13	1030EST			0	0			Hail (0.75)
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Lenawee County

Tecumseh	13	1040EST			0	0			Hail (0.75)
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Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MICHIGAN, East

Washtenaw County

Milan	13	1056EST			0	0			Hail (1.00)
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Washtenaw County

Ypsilanti	13	1056EST			0	0			Hail (1.00)
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Monroe County

2 W Dundee	13	1110EST			0	2			Lightning
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Macomb County

Fraser	13	1115EST			0	0			Hail (0.75)
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Wayne County

Detroit	13	1115EST			0	0			Hail (0.75)
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Monroe County

2 SW Monroe	13	1140EST			0	0			Hail (0.75)
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A cold front moved southeast across lower Michigan during the morning hours, and exited the state by early afternoon. A band of thunderstorms developed along and just ahead of the front. Several of the thunderstorms produced marginally severe hail. Just west of Dundee, two workers were slightly injured when lightning struck a gravel pile at a construction site. The men were standing near the pile when it was struck. One was taken to a local hospital for examination, then released; the second refused treatment.

MICHIGAN, Extreme Southwest

NONE REPORTED.

MICHIGAN, North

Alpena County

Cathro	12	1600EST			0	0			Hail (0.75)
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Roscommon County

Roscommon	13	0133EST			0	0			Hail (1.00)
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Manistee County

Bear Lake	13	0137EST			0	0			Hail (0.75)
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Manistee County

Wellston	13	0605EST			0	0			Hail (0.75)
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Several severe thunderstorm warnings were issued across northern lower Michigan during the late afternoon to early morning hours for the threat of large hail. Very cold air aloft and warm humid surface conditions allowed thunderstorms to become severe.

MICHIGAN, Upper

MIZ001-005>007-009 Keweenaw - Marquette - Alger - Luce - Gogebic

22		0030EST			0	0	21K	2K	High Wind (G67)
23		1230EST							

A deep low pressure center north of Lake Superior moved slowly east with strong northwest winds blowing across Lake Superior and northern Upper Michigan. Winds of 30 to 40 knots with gusts to as high as 67 knots were reported. There were numerous reports of local power and telephone outages caused by limbs and trees blown down across power and phone lines in the counties along Lake Superior. Downed trees blocked roads near Eagle Harbor. Fourteen foot waves caused minor shoreline erosion in a few locations along the western shoreline of the Keweenaw Peninsula from Ontonagon to Copper Harbor. Twenty foot waves pounded the shores of Lake Superior from east of Munising to Whitefish point with minor beach erosion and shoreline flooding in a few locations.

MICHIGAN, West

Lake County

Baldwin	13	0241EST 0315EST			0	0	10K		Tstm Wind/Hail
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A heavy thunderstorm produced 1.75" diameter hail in Baldwin. Golf ball sized hail was reported at Ivans Campground.

Osceola County

Reed City	13	0307EST 0340EST			0	0	10K		Tstm Wind/Hail
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1.25" hail was reported by area law enforcement in Reed City.

Heavy thunderstorms developed across central lower Michigan during the early morning hours of the 13th in advance of a cold front

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MICHIGAN, West

dropping southeast from Wisconsin and upper Michigan. These thunderstorms produced several reports of very large hail in Lake and Osceola counties.

MINNESOTA, Central and South Central

MNZ070-073>078-082>085 **Dakota - Redwood - Brown - Nicollet - Le Sueur - Rice - Goodhue - Watonwan - Blue Earth - Waseca - Steele**

01	1700CST 2359CST			0	0				Early Snowfall
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One of the earliest significant snowfalls ever fell in a narrow track across southern Minnesota. Vesta in Redwood county reported 3.0 inches, while Montgomery in LeSeur County collected 4.0 inches. Springfield in Brown County posted 3.75 inches, with 2.75 inches of snow falling in Mankato (Blue Earth County). Finally 4.0 inches of snow was observed in Northfield, within Rice county.

MINNESOTA, Northeast

NONE REPORTED.

MINNESOTA, Northwest

NONE REPORTED.

MINNESOTA, Southeast

NONE REPORTED.

MINNESOTA, Southwest

MNZ071>072-080>081-089>090-097 **Lincoln - Lyon - Murray - Cottonwood - Nobles - Jackson - Pipestone**

01	0800CST 2000CST			0	0	35K			Heavy Snow
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An early season snowfall of 4 to 6 inches cause damage to trees and power lines because of the weight of the heavy, wet snow. A few power outages occurred.

MINNESOTA, West

NONE REPORTED.

MINNESOTA, West Central

NONE REPORTED.

MISSISSIPPI, Central

NONE REPORTED.

MISSISSIPPI, North

NONE REPORTED.

MISSISSIPPI, South

NONE REPORTED.

MISSISSIPPI, Southeast

NONE REPORTED.

MISSOURI, East

NONE REPORTED.

MISSOURI, Lower

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage	Property	Crops	Character of Storm
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MISSOURI, Northwest

MOZ054	Henry										
	03	0000CST			0	0					Flood
		1900CST									

Up to 1.5 inches of rain fell in west-central and central sections of Missouri on October 2-3, causing minor flooding on the South Grand River near Urich. The river crested on October 3 at 24.5 feet, half a foot above flood stage.

MISSOURI, Southeast

MOZ076-086>087-100-107>112-114	Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid										
	01	0001CST			0	0					Drought
	31	2359CST									

The severe summer-long drought was greatly alleviated by heavy rains on October 8th and 9th. During the months of August and September, only about 0.75 inches of rain fell at the Farm Service Agency in East Prairie, Missouri. This deficit was partially offset by 4.03 inches of rain on October 8th and 9th. The rain came too late for most crops, except possibly for farmers sowing wheat. Burning bans were rescinded. The request for Cape Girardeau residents to conserve water was dropped. No rain fell during the rest of the month, so despite the heavy rain, drought concerns were renewed by November.

MOZ076-086>087-100-107>112-114	Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid										
	01	0001CST			0	0					Drought
	31	2359CST									

The severe summer-long drought was greatly alleviated by heavy rains on October 8th and 9th. During the months of August and September, only about 0.75 inches of rain fell at the Farm Service Agency in East Prairie, Missouri. This deficit was partially offset by 4.03 inches of rain on October 8th and 9th. The rain came too late for most crops, except possibly for farmers sowing wheat. Burning bans were rescinded. The request for Cape Girardeau residents to conserve water was dropped. No rain fell during the rest of the month, so despite the heavy rain, drought concerns were renewed by November.

MISSOURI, Southwest

MOZ055>058-066>071-077>083-088>098-101>106	Benton - Morgan - Miller - Maries - Vernon - St. Clair - Hickory - Camden - Pulaski - Phelps - Barton - Cedar - Polk - Dallas - Laclede - Texas - Dent - Jasper - Dade - Greene - Webster - Wright - Newton - Lawrence - Christian - Douglas - Howell - Shannon - McDonald - Barry - Stone - Taney - Ozark - Oregon										
	01	0000CST			0	0		660K			Drought
	31	2359CST									

Drought conditions existed across central, south central, and southwest Missouri from early July through October. The hardest hit areas were in south central Missouri where Spring rainfall was also below normal.

Dry weather along with periods of above normal temperatures reduced crop yields and greatly reduced the quality of hay, corn, and soybeans grown in 1999. Hot weather in July and August also reduced the milk yield of dairy cattle. The dry weather is also already taking a toll on the winter wheat crop.

Stock ponds in many areas dried up forcing farmers to either pump or transport water for livestock. A few shallower wells reportedly ran dry. Many ranchers sold cattle and other livestock due to the lack of an adequate water supply. Some farmers compared this drought to the last severe drought in the area which occurred in 1980.

Howell County

West Plains	09	1640CST									
		1840CST			0	0	0				Flash Flood

A cluster of heavy rain producing thunderstorms produced over 4 inches of rain in central Howell County within a 3 hour period. Widespread street flooding was reported in West Plains.

MONTANA, Central

MTZ009	Rocky Mountain Front										
	03	2203MST			0	0		50K			High Wind (G70)
		BROWNING...G69 KT 6SW DUPUYER									
MTZ010	Eastern Glacier / Eastern Pondera / Toole / Liberty										
	03	2335MST			0	0					High Wind (G56)
		CUT BANK ASOS									
MTZ011	Blaine / Chouteau / Hill										
	04	0730MST			0	0					High Wind (G56)
		FORT BELKNAP RAWS									

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
<u>MONTANA, Central</u>									
MTZ012		Cascade / Eastern Teton							
	08	1330MST			0	0			High Wind (G67)
		CHOTEAU AIRPORT							
MTZ009		Rocky Mountain Front							
	11	1800MST			0	0			Heavy Snow
	12	0900MST							
		EAST GLACIER 11 INCHES...ST MARY 10 INCHES							
MTZ010		Eastern Glacier / Eastern Pondera / Toole / Liberty							
	13	1255MST			0	0			High Wind (G51)
		CUT BANK ASOS							
MTZ011		Blaine / Chouteau / Hill							
	13	1456MST			0	0			High Wind (G53)
		CHINOOK 11S...G50 KT INVERNESS 1400 MST							
MTZ013		Fergus / Judith Basin							
	13	1700MST			0	0			High Wind (G52)
		ROY							
MTZ011		Blaine / Chouteau / Hill							
	29	0230MST			0	0			High Wind (G54)
		CHINOOK 11S							
MTZ010		Eastern Glacier / Eastern Pondera / Toole / Liberty							
	30	1035MST			0	0			High Wind (G55)
		CUT BANK ASOS							
MTZ014		Broadwater / Jefferson / Meagher / Central And Southern Lewis And Clark							
	31	1138MST			0	0	80K		High Wind (G57)
		1600MST							
		WHITE SULPHUR SPRINGS...52 KT HELENA AND 5N BOULDER							
MTZ012		Cascade / Eastern Teton							
	31	1145MST			0	0	200K		High Wind (G71)
		1315MST							
		10NE GREAT FALLS...64KT 13SE BELT...59KT GREAT FALLS...51KT CASCADE AND 2S CHOTEAU							
MTZ010		Eastern Glacier / Eastern Pondera / Toole / Liberty							
	31	1215MST			0	0	300K		High Wind (G66)
		1445MST							
		16SSW GALATA...G60 KT SWEETGRASS...G59 KT CUT BANK ASOS...G56KT SHELBY...G54KT CHESTER							
MTZ011		Blaine / Chouteau / Hill							
	31	1230MST			0	0	300K		High Wind (G76)
		1630MST							
		11S CHINOOK...61KT 6N BIG SANDY...60KT HAVRE ASOS...56KT INVERNESS...55KT 1W HARLEM AND FT BELKNAP...52KT HARLEM AND GERALDINE							
MTZ015		Gallatin / Madison							
	31	1315MST			0	0			High Wind (G52)
		THREE FORKS							
MTZ013		Fergus / Judith Basin							
	31	1315MST			0	0	150K		High Wind (G58)
		1800MST							
		2NW WINDHAM...56KT LEWISTOWN...54 KT 1E ROY AND DENTON...50KT 6E GEYSER							
MTZ009		Rocky Mountain Front							
	31	1450MST			0	0	100K		High Wind (G76)
		CHOTEAU							
<u>MONTANA, East</u>									
Sheridan County									
Outlook	31	1330MST			0	0	6M		Wild/Forest Fire
		2359MST							

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MONTANA, East

MTZ016>027

Phillips - Valley - Daniels - Sheridan - Roosevelt - Petroleum - Garfield - McCone - Richland - Dawson - Prairie - Wibaux

31	1530MST 2359MST				0	0			High Wind (G65)
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Roosevelt County

1 E Wolf Pt to
13 E Wolf Pt

31	1745MST 2359MST				0	0	5M		Wild/Forest Fire
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High winds sustained at 50 to 60 miles an hour and gusts to near 80 miles an hour caused minor damage throughout northeast Montana. The winds were also responsible for the rapid spread of several wild fires which reeked havoc through several communities. Peak winds were clocked as follows:

Glasgow	66 MPH
Glendive	62 MPH
Tampico	71 MPH
Fort Peck	66 MPH
Winnett	67 MPH
Chain Buttes	68 MPH
Dry Blood Cr	64 MPH
Plentywood	65 MPH
Wolf PT	67 MPH
Poplar	73 MPH
N of Oswego	72 MPH
Zortman	75 MPH
Sawmill Creek	80 MPH
Bluff Creek	69 MPH
Jordan	69 MPH
King Coulee	77 MPH
Sidney	64 MPH
Big Sheep MTN	64 MPH

Wind driven fires started by the railroad raced into the small community of Outlook. Townspeople were evacuated before the fire hit the area. Twenty buildings or about one third of the town was destroyed. To the south a fire started east of Wolf Point and burned eighteen square miles engulfing four homes and the local UPS distribution facility. Other smaller fires occurred in Dawson, Garfield, Phillips, McCone and Richland Counties. The winds gradually subsided during the early morning hours of November 1. Fires continued to burn in spots for much of the day on the 1st.

MONTANA, South

MTZ034

Stillwater

15	2230MST				0	0			Heavy Snow
16	0630MST								

Low level upslope from moisture rotating around a low pressure system in Colorado produced heavy snowfalls on the morning of October 16 in portions of Carbon County. 12 to 14 inches of snow fell in the Roscoe area and 6 to 7 inches fell in the Red Lodge area.

**MTZ028>029-
031>038**

Wheatland - Musselshell - Rosebud - Custer - Fallon - Stillwater - Yellowstone - Powder River - Carter - Big Horn

31	1330MST 2100MST				0	0			High Wind (G70)
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A low pressure system intensified over Alberta on the morning of October 31. As this system moved across southern Alberta and southwestern Saskatchewan, strong southwest winds developed ahead of an associated dry cold front as it crossed Montana. These winds were felt mainly in the upper Yellowstone Valley. Strong northwest winds developed behind the front across the remainder of South Central and southeastern Montana. These winds followed the frontal passage during the afternoon of the 31st and continued through much of the evening. Wind gusts as high as 80 mph were observed in downtown Billings. Several other locations in South Central and southeastern Montana reported sustained winds of 40 to 50 mph and gusts between 60 and 70 mph. Several wild fires also broke out across southeast Montana as the winds combined with low humidities and low fuel moistures.

MONTANA, West

MTZ003-005

Flathead/Mission Valleys - Missoula / Bitterroot Valleys

31	1154MST 1200MST				0	0			High Wind (G65)
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Wind gusts in the 40 to 50 mph range caused the following damage in northwest Montana:

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MONTANA, West

Whitefish - Winds caused trees to fall and damage three cars. Numerous power lines down.
 Bigfork - Tree fell on back of restaurant. Trailer home damaged. Numerous power lines down.
 3 miles southeast of Missoula - Metal shed collapsed.
 Woods Bay - Trees fell and damaged three homes.
 Ronan - Trees fell and damage two homes.
 Lolo - Winds blew off portion of roof of industrial building.
 Wind gusts in the 60 to 70 mph range caused the following damage in the Bitterroot Valley:
 Florence/Stevensville - Trees fell and damaged 35 homes. Some roofs torn off of homes.

NEBRASKA, Central

NONE REPORTED.

NEBRASKA, East

NONE REPORTED.

NEBRASKA, Extreme Northeast

NONE REPORTED.

NEBRASKA, Extreme Southwest

NONE REPORTED.

NEBRASKA, South Central

NONE REPORTED.

NEBRASKA, West

NONE REPORTED.

NEVADA, North

NONE REPORTED.

NEVADA, South

NONE REPORTED.

NEVADA, West

NVZ003

Greater Reno/Carson City/Minden Area

27 2144PST 0 0 0 0 High Wind (G51)
 Peak wind gust of 59mph recorded in Gardnerville.

NVZ003

Greater Reno/Carson City/Minden Area

28 0450PST 0 0 0 0 High Wind (G61)
 Peak wind gust of 70 mph recorded overnight in SW Reno.

NEW HAMPSHIRE, North and Central

NHZ001>002

Northern Coos - Southern Coos

04 0600EST 0 0 Early Snowfall
 1500EST

Low pressure moving eastward through the mid-Atlantic States brought an early season snowfall to the higher terrain in northern New Hampshire. Up to 4 inches of snow fell in the area.

**NHZ001>010-
013>014**

Northern Coos - Southern Coos - Northern Grafton - Northern Carroll - Southern Grafton - Southern Carroll - Sullivan - Merrimack - Belknap - Strafford - Interior Rockingham - Coastal Rockingham

14 0900EST 0 0 Strong Winds
 1600EST

Strong, gusty, northwest winds developed across New Hampshire on the west side of an intensifying low pressure system as it moved across New England. The wind downed trees and limbs onto power lines causing scattered power outages. Approximately 22,000 customers were affected by the outages. Peak wind gusts were 47 mph at Portsmouth, 45 mph at Concord, and 39 mph at Lebanon.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW HAMPSHIRE, Southern

NHZ011>012

Cheshire - Hillsborough

14	1100EST 2000EST				0	0			Strong Wind
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Strong northwest winds, gusting as high as 50 mph, buffeted southwest New Hampshire in the wake of a strong cold front. There were scattered reports of downed tree limbs and power lines, as well as a few downed trees. Much of the damage was reported in the Nashua area, where about 2,400 customers lost power.

NEW JERSEY, Northeast

NJZ003-005

Bergen - Essex

14	0730EST 0740EST				1	1			Wind
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Strong and gusty northwest winds developed behind a rapidly moving strong cold front. Most wind gusts were between 40 and 50 mph.

In Essex County, gusty winds downed a 3 foot wide, 35 foot high oak tree in Glen Ridge. This tree fell on a van and crushed a 2 year old boy. His mother, who was injured, began climbing into the van as the tree fell. She required hospital treatment. A spotter from North Arlington in Bergen County also reported a downed tree. M2VE

NJZ003

Bergen

18	0535EST				1	0			Wind
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As the remnants of tropical weather system Irene moved northeast off the coast, strong and gusty north to northeast winds developed. Wind gusts from 40 to 50 mph caused an unmounted 400 pound security gate to fall on and crush an 87-year old woman that was walking to work in Englewood. F87OU

NEW JERSEY, South and Northwest

Cape May County

Countywide	17 1500EST 18 0200EST				0	0			Heavy Rain
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Atlantic County

Leeds Pt to Somers Pt	17 1700EST 18 0200EST				0	0			Heavy Rain
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Ocean County

Pt Pleasant to Tuckerton	17 1800EST 18 0200EST				0	0			Heavy Rain
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Heavy rain associated with Hurricane Irene fell across Cape May County and coastal sections of Atlantic and Ocean Counties from the late afternoon of the 17th into the early morning of the 18th. The hurricane itself passed well southeast of the state, about 225 miles offshore during the morning of the 18th. The heaviest rain in the state fell around Cape May City with Doppler Radar storm total estimates of between 2.5 and 3.0 inches. Storm totals elsewhere ranged between 1.5 and 2.5 inches. Some poor drainage flooding occurred, but no serious damage or injuries were reported. Storm totals included 2.50 inches in Beach Haven (Ocean County), 2.03 inches in Wildwood (Cape May County), 1.83 inches in Margate (Atlantic County), 1.64 inches at the Marina within Atlantic City and 1.61 inches in Harvey Cedars (Ocean County).

NEW MEXICO, Central and North

NMZ003>005-

**010>011-016>017-
026**

Upper Rio Grande Valley - Sangre De Cristo Mountains - Northeast Highlands - Sandia/Manzano Mountains - Central High Plains/Estancia Valley County - Lincoln County High Plains/Hondo Valley - Capitan/Northern Sacramento Mountains - Guadalupe Mountains Of Chaves County

16	2100MST				0	0	250K		Winter Storm
17	1500MST								

The first significant storm of the fall season dropped heavy, wet snow of 6 to 14 inches over the northern and southern mountains and also on the eastern slopes of the Sandia and Manzano Mountains. Most roads remained open or else were quickly cleared by county crews, but a number of people, mainly hunters in the northern mountains and a group of about 23 individuals on Capilla Peak southeast of Albuquerque, were trapped in the high terrain for as long as 12 hours after they ignored timely storm warnings. A small area of extreme southeast Rio Arriba County and far northern Santa Fe County suffered extended power outages lasting 2-3 days after wet snow overloaded tree limbs which knocked down power lines.

NEW MEXICO, South Central and Southwest

NONE REPORTED.

NEW MEXICO, Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW YORK, Central

Steuben County

Cohocton	13	1720EST			0	0				Hail (1.00)
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Steuben County

Hornell to Arkport	13	1740EST			0	0				Thunderstorm Wind (G50)
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Isolated clusters of thunderstorms were spawned during the early evening hours by a weak upper level disturbance lifting northeast out of the Ohio valley. As this weather system interacted with an unstable airmass in place across central New York, a few thunderstorms reached severe levels producing hail and damaging wind gusts. A swath of trees were knocked down from Hornell to Arkport with numerous power outages across the South Central Tier as a result of downed wires.

NEW YORK, Coastal

NYZ067-077

Orange - Nassau

14	0530EST 0852EST				0	1				Wind
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Strong and gusty northwest winds developed behind a rapidly moving strong cold front. Most wind gusts were between 40 and 50 mph.

In Orange County, gusty winds downed tree limbs that fell onto power lines and caused scattered power outages across many sections of the county including Cuddebackville, Port Jervis, Middletown, Gardiner, Newburgh, and New Windsor.

In Nassau County, gusty winds downed a dead one and a half-foot wide, 70 foot tall oak tree. This tree fell on and crushed a car, including a 72 year old man who was sitting in the back seat. This occurred on Sagamore Hill Road in Cove Neck and resulted in his critical injury.

NEW YORK, East

NYZ032>033

Northern Herkimer - Hamilton

04	0200EST 1100EST				0	0	0			Snow
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During the early morning hours of October 4, a low pressure area tracked through the Ohio Valley, then along the Pennsylvania New York border. Enough cold air interacted with the associated moisture to produce an unseasonably early snowfall across portions of northern Herkimer and Hamilton counties. Three to six inches of wet snow accumulations were common in the region north of State Route 28 and West of Blue Lake. There were no major problems reported to the National Weather Service from the early snowfall.

NEW YORK, North

NYZ028-031- 034>035

Northeast Clinton - Southwest Clinton - Western Essex - Eastern Essex

04	0500EST 1200EST				0	0	40K			Light Snow
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A weak area of low pressure moved along a frontal boundary from Pennsylvania across southern New England during Monday, October 4th. Rain changed to wet snow. Accumulations ranged widely from a dusting up to 4 inches. The greatest amounts were in the higher terrain with 4 inches reported at Ellenburg Depot. Automobile accidents were reported throughout the area. In the town of Moriah, NY a school bus collided with a car, but no injuries were reported. Power outages were scattered across both Clinton and Essex counties.

NYZ027-030

Northern Franklin - Southern Franklin

04	0500EST 1100EST				0	0	20K			Light Snow
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A weak area of low pressure moved along a frontal boundary from Pennsylvania across southern New England during Monday, October 4th. Rain changed to wet snow. Accumulations were generally 1 to 3 inches but locally higher in the mountains. Automobile accidents were reported throughout the area.

St. Lawrence County

Edwards	13	1821EST			0	0				Tstm Wind/Hail
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An area of low pressure and it's associated cold front moved across northern New York Wednesday night (10/13/99). Scattered thunderstorms developed along and ahead of the front. In Edwards, NY brief heavy rain was reported with frequent lightning and estimated wind gusts of 35 to 43 knots (40 to 50 mph).

NEW YORK, West

Niagara County

Youngstown	13	1515EST			0	0	10K			Thunderstorm Wind (G66)
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Niagara County

Hartland	13	1545EST			0	0	15K			Thunderstorm Wind
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Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<u>NEW YORK, West</u>									
Chautauqua County									
Dunkirk	13	1600EST			0	0	10K		Thunderstorm Wind
Erie County									
Hamburg	13	1630EST			0	0	35K		Thunderstorm Wind
Niagara County									
Niagara Falls	13	1640EST			0	0	25K		Thunderstorm Wind (G51)
Genesee County									
Corfu	13	1700EST			0	0	15K		Thunderstorm Wind (G51)
Wyoming County									
Gainesville	13	1700EST			0	0	10K		Thunderstorm Wind (G51)
Livingston County									
Livonia	13	1710EST			0	0	10K		Thunderstorm Wind (G51)
Allegany County									
Wellsville	13	1730EST			0	0	25K		Thunderstorm Wind
Monroe County									
Webster	13	1730EST			0	0	35K		Thunderstorm Wind
Ontario County									
Canandaigua	13	1803EST			0	0	15K		Hail (0.75)
Allegany County									
Andover	13	1900EST			0	0	10K		Thunderstorm Wind

A strong cold front cross the area. The thunderstorms that accompanied the front produced damaging winds and large hail. The winds downed trees and power lines. About 10,000 customers lost their power. Falling trees damaged houses in south Buffalo, Elma, Webster and Portville. Hail was reported throughout the Niagara frontier including North Tonawanda, Williamsville and Alden. Large hail fell in Canandaigua. Winds frequently gusted near 60 mph with a peak gust of 71 mph reported in Lewiston.

NORTH CAROLINA, Central

Cumberland County

Countywide	17	1700EST 2300EST			0	0			Flash Flood
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Hoke County

Countywide	17	1700EST 2300EST			0	0			Flash Flood
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Sampson County

Countywide	17	1700EST 2300EST			0	0			Flash Flood
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Scotland County

Countywide	17	1700EST 2300EST			0	0			Flash Flood
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Wayne County

Countywide	17	1700EST 2300EST			0	0			Flash Flood
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Edgecombe County

Countywide	17	1800EST 2300EST			0	0			Flash Flood
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Johnston County

Countywide	17	1800EST 2300EST			0	0			Flash Flood
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Nash County

Countywide	17	1800EST 2300EST			0	0			Flash Flood
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Wilson County

Countywide	17	1800EST 2300EST			0	0			Flash Flood
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Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, Central

Harnett County

Countywide	17	1830EST 2300EST			0	0			Flash Flood
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Halifax County

Countywide	17	2030EST 2300EST			0	0			Flash Flood
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Heavy rain, associated with Hurricane Irene, produced yet another flooding episode across the eastern half of North Carolina. Generally, west of Interstate 95, amounts were in the 1 to 3 inch category. East of I-95, 2-4 inches were common. However, in the southern coastal plain, accumulations of 4-5 inches were reported with small bands of 6-8 inches.

Since the ground and our water ways had not yet recovered from the floods of Dennis and Floyd, this additional rainfall caused problems. Rapid runoff and persistent rainfall quickly filled local streams which overflowed onto roads and into adjacent neighborhoods.

Hoke County

Arabia	18	0830EST 1010EST			0	0			Flash Flood
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A small dam near Arabia started leaking late at night and finally broke later that morning. Several roads were inundated and a few homes sustained minor flooding.

NORTH CAROLINA, Central Coastal

NCZ080>081-093>095-098-104 **Beaufort - Western Hyde - Craven - Pamlico - Carteret - Onslow - Eastern Hyde**

16	1700EST				1	0			Hurricane
18	0400EST								

NCZ045>047-103 **Washington - Tyrrell - Western Dare - Eastern Dare**

16	2200EST				0	0			Tropical Storm
18	0400EST								

At 1000 EST on Wednesday, October 13th the ninth tropical storm of the season was named. Tropical Storm Irene was positioned about 330 miles south-southwest of Havana, Cuba. The storm was moving north-northwest near 8 mph with maximum sustained winds of 40 mph. By 0400 EST the next day Irene was upgraded to a hurricane. On October 15th she crossed the Florida Keys and continued to bear down on the southwest Florida coast. As she crossed the southern Florida Peninsula, winds slightly weakened. Saturday morning Hurricane Irene moved offshore over the warm Atlantic Gulf Stream water. At the same time, the hurricane watches were extended north to include Cape Hatteras south. Irene was undoubtedly going to threaten the Carolinas. By Saturday afternoon the watch was upgraded to a warning with tropical storm warnings for north of Cape Hatteras.

Fortunately, the category 1 hurricane paralleled the coast of eastern North Carolina. Since the eye remained offshore so did the hurricane force winds. In turn, storm surges were insignificant. Very minor beach erosion was experienced along the beaches in Onslow County and along Bogue Banks in Carteret County. The highest offshore wind was 67 mph...observed at Diamond Shoals C-Man platform. The peak inland wind reported was 47 mph at Cape Hatteras/Frisco. One F0 tornado was reported in Onslow County near the intersection of Highway 24 and Highway 17...causing only minor damage.

Rainfall again played the largest role during the event. The greatest rainfall estimates from the Doppler radar were over Craven...Pitt...Beaufort...Martin...Dare...and Hyde counties. Estimates were from 4 to 6 inches with isolated areas receiving 8 to 10 inches. A spotter reported 11 inches in Ernul/Craven County on the 17th and 18th. This excessive rainfall caused many road closures and some areas in Lenoir County reported a foot of water on secondary roads. No significant damage was reported from Hurricane Irene. One fatality was reported in western Beaufort County. A male was driving an automobile on Highway 264 when the vehicle hydroplaned. Craven and Lenoir Counties were obviously the most affected. River levels remained above flood stage on the Neuse River since before Hurricane Floyd. Additionally, major flooding occurred along the Swift Creek near Vanceboro back to levels similar to but not as bad as Hurricane Floyd.

Onslow County

Jacksonville	17	0950EST	0.2	10	0	0			Tornado (F0)
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This tornado was associated with Hurricane Irene. The tornado was fast to develop and fast to dissipate. Spotter reports indicated only minimal damage near the intersection of Highway 24 and Highway 17. Ironically, the twister moved a dumpster into the middle of the highway.

Beaufort County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Estimated Damage	Property	Crops	Character of Storm
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NORTH CAROLINA, Central Coastal

Carteret County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Craven County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Duplin County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Greene County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Jones County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Lenoir County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Martin County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Onslow County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Pamlico County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Pitt County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

Washington County

Countywide	17	1319EST			0	0			Flash Flood
	18	0100EST							

In advance of Hurricane Irene outer rain bands began affecting eastern North Carolina on the afternoon of Sunday, October 17th. One of the first flooding reports came from the Lenoir County EOC...up to one foot of water was covering many of their secondary roads. An observer in Williamston/ Martin County reported 10 inches of rain with many road closures. The Washington County EOC reported street flooding on Main Street and Rankin Lane in Plymouth. Amateur radio reports stated that many roads in Craven and Beaufort County...especially Ernul and Chocowinity were impassable. The greatest Doppler radar reports were over Craven...Pitt...Beaufort...Martin...Dare and Hyde Counties. Estimates were from 4 to 6 inches with isolated areas receiving 8 to 10 inches. Other areas received an average of 4 inches.

NORTH CAROLINA, Extreme Southwest

NONE REPORTED.

NORTH CAROLINA, North Coastal

NCZ015>017- Pasquotank - Camden - Western Currituck - Bertie - Chowan - Perquimans - Eastern Currituck

030>032-102

17	1600EST				0	0	31K	Hurricane
18	0600EST							

Hurricane Irene was an intensifying Category 1 hurricane at the time of closest approach to the Wakefield county warning area during the overnight hours of Monday October 18th. Irene was the third tropical system of the 1999 hurricane season to affect the Wakefield county warning area, and brought another round of very heavy rain into northeast North Carolina. The very heavy rainfall, locally up to 5 to 9 inches, resulted in widespread street flooding and small stream and tributary flooding in portions of northeast North Carolina. The highest sustained wind speed recorded at the Elizabeth City Coast Guard Station (ECG) was 30 mph with gusts to 38 mph. A storm surge of approximately 2 to 3 feet was observed in the Albemarle Sound, with minor flooding in coastal sections of those counties. The lowest sea level pressure recorded at the Elizabeth City Coast Guard Station (ECG) was 995.1 mb.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, North Coastal

Pasquotank County

Weeksville	17	1730EST	0.2	50	0	1	150K		Tornado (F2)
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A tornado associated with Hurricane Irene touched down one mile north of Weeksville. This tornado touched down near the intersection of Toxey Road and N.C. Route 34. The tornado moved due north for about two tenths (0.2) mile with a path width of 50 yards. Two trailers were totally destroyed. One trailer was flipped over and another sustained some damage. A modular home sustained significant damage with several vehicles in the front yard turned 90 degrees. An automobile was thrown up into a tree and wrapped partially around a tree. A cinderblock building sustained a wall failure and a partial collapse of the roof. Clay roofing tiles from this building were thrown 100 yards from the building. Several other structures sustained minor damage. Two trees, a pine and willow tree were completely stripped of all branches. In addition, a refrigerator was carried the entire path length of the tornado and deposited in the front yard of the modular home.

Bertie County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Camden County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Chowan County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Currituck County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Gates County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Hertford County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Northampton County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Pasquotank County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Perquimans County

Countywide	17	1730EST			0	0			Flash Flood
	18	0100EST							

Very heavy rainfall, locally up to 4 to 9 inches, associated with Hurricane Irene, resulted in numerous flooded roads and roads closed due to high water.

NORTH CAROLINA, Northwest and North Central

NONE REPORTED.

NORTH CAROLINA, South Coastal

Bladen County

Kelly to Bladenboro	17	0930EST 2130EST			0	0			Flood
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Brunswick County

Calabash to Leland	17	0930EST 2130EST			0	0			Flood
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Columbus County

Nakina to Whiteville	17	0930EST 2130EST			0	0			Flood
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Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	

NORTH CAROLINA, South Coastal

New Hanover County

Carolina Beach to Castle Hayne	17	0930EST 2130EST			0	0			Flood
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Pender County

Hampstead to Burgaw	17	1030EST 1630EST			0	0			Flood
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As the center of Hurricane Irene, about 60 miles offshore, moved up the coast on the 17th, winds gusted around 30 mph on the beaches. Rainfall 5 to 7 inches caused flooding along the coastal counties and inland in Bladen and Columbus Counties. As the ground was still saturated from around 20 inches of rain during Hurricane Floyd a month earlier, the rains of Irene caused widespread flooding on roadways.

In Brunswick County, state roads were closed in 14 areas around the county. In Columbus County, heavy downpours caused flooding in downtown Whiteville, and 9 traffic wrecks around the county were attributed to flooding. In Bladen County, flooding in the Bladenboro and Butters areas was especially notable. In New Hanover County, several subdivisions were flooded and several roads were impassable. In Pender County, some secondary roads were reported flooded.

NORTH CAROLINA, Southwest

NCZ033>037-048>059-062>072-082
Avery - Caldwell - Alexander - Iredell - Davie - Madison - Yancey - Mitchell - Swain - Haywood - Buncombe - McDowell - Burke - Catawba - Rowan - Graham - Northern Jackson - Macon - Southern Jackson - Transylvania - Henderson - Polk - Rutherford - Cleveland - Lincoln - Gaston - Mecklenburg - Cabarrus - Union

01	0000EST			0	0			Drought
31	2359EST							

The return of some rainfall as well as lower evaporation rates due to the change of seasons, resulted in the drought easing somewhat. Drought classifications were lowered in some cases, and some places lifted water restrictions. However, the drought had not ended by the end of the month.

Cabarrus County

Countywide	11	0500EST 0900EST			0	0			Flood
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Tropical moisture streaming north along a slow moving frontal boundary resulted in persistent heavy rain across the piedmont of North Carolina overnight. Up to 12 roads in the county became closed due to flooding.

NORTH DAKOTA, Central and West

NDZ001>005-009>013-017>022-031>033-040>041-043>044
Divide - Burke - Renville - Bottineau - Rolette - Williams - Mountrail - Ward - Mchenry - Pierce - Mckenzie - Dunn - Mercer - Oliver - Mclean - Sheridan - Golden Valley - Billings - Stark - Slope - Hettinger - Bowman - Adams

31	1730CST 2359CST			0	0	2.6M	4.9M	High Wind (G64)
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An intense low pressure system over southern Saskatchewan Canada trailed a strong cold front into eastern Montana. The strong cold front entered western North Dakota Sunday evening moving into central North Dakota before midnight. The storm system continued moving east across the state during the morning hours Monday November 1st. The system brought widespread winds in excess of 65 mph to western and central North Dakota. The high winds combined with very dry conditions caused numerous wild fires burning thousands of acres of land and a few buildings. Numerous homes and businesses reported wind damage to roofs and windows.

NORTH DAKOTA, East

NDZ006>007-014>015-024
Towner - Cavalier - Benson - Ramsey - Eddy

31	2200CST 2359CST			0	0	20K	High Wind (G53)
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A strong pressure gradient developed across North Dakota, between a low over southern Ontario and a high building in from Montana. The strongest winds and the most damage occurred early the next morning, on November 1st. However, some damage to roofs, trees, signs, fences, power lines, and traffic signals did occur when the strong wind first picked up in intensity.

OHIO, East

Coshocton County

3 W Coshocton	13	1630EST			0	0	3K	Thunderstorm Wind
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Thunderstorm winds downed several trees.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>OHIO, East</u>									
Muskingum County									
Dresden	13	1649EST			0	0	3K		Thunderstorm Wind
Thunderstorm winds downed several trees and power lines.									
Columbiana County									
7 W Salem	13	1650EST			0	0	3K		Thunderstorm Wind (G57)
Thunderstorm winds estimated at 65 MPH by a spotter downed several trees.									
Coshocton County									
2 E Coshocton	13	1655EST			0	0	3K		Thunderstorm Wind
Thunderstorm winds downed several trees.									
Carroll County									
Palermo	13	1715EST			0	0	1K		Thunderstorm Wind
Thunderstorm winds downed a large tree.									
Tuscarawas County									
Mineral City	13	1715EST			0	0	3K		Thunderstorm Wind
Thunderstorm winds downed several trees and power lines.									
Guernsey County									
1 W Cambridge	13	1730EST			0	0	3K		Thunderstorm Wind
Thunderstorm winds downed several trees.									
Harrison County									
Cadiz	13	1735EST			0	0	5K		Thunderstorm Wind
Thunderstorm winds downed several large oak trees.									
Belmont County									
Countywide	13	1745EST 1855EST			0	0	10K		Thunderstorm Wind
Thunderstorm winds downed trees countywide.									
Jefferson County									
Steubenville	13	1800EST			0	0			Hail (0.75)
Monroe County									
15 S Woodfield	13	1825EST			0	0	3K		Thunderstorm Wind
Thunderstorm winds downed several trees and power lines.									
<u>OHIO, North</u>									
Ottawa County									
Put In Bay	07	0835EST			0	0			Waterspout
A large waterspout was sighted approximately three miles southwest of Put-In-Bay. No damage occurred.									
Lucas County									
Toledo	13	1330EST			1	0	100K		Thunderstorm Wind
Thunderstorm winds estimated at 50 to 55 mph toppled a crane hoisting a 5,000 pound bucket of concrete onto the roof a building in downtown Toledo. A 50 year old male worker on the roof was crushed by the falling bucket of concrete. M500U									
Ottawa County									
Countywide	13	1400EST			0	0	50K		Thunderstorm Wind
Trees and power poles downed in Danbury, Clay Center, Genoa and Port Clinton. A wall under construction in Port Clinton was toppled by thunderstorm winds. Scaffolding and portions of a fence were destroyed by the wall.									
Ottawa County									
Lakeside	13	1404EST			0	0	20K		Lightning
Lightning struck an historic auditorium and caused a fire.									
Marion County									
Countywide	13	1420EST			0	0	35K		Thunderstorm Wind
Trees downed countywide. A railroad crossing gate was blown down just south of Marion and several power poles were also downed in and around Marion.									
Sandusky County									
Countywide	13	1420EST			0	0	15K		Thunderstorm Wind
Trees and power poles downed throughout the county.									

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
OHIO, North									
Crawford County									
Bucyrus	13	1430EST			0	0			Hail (1.75)
Erie County									
Countywide	13	1430EST			0	0	30K		Tstm Wind/Hail
A 62 mph wind gust was measured and dime size hail observed in Vermillion. Several trees were downed in Sandusky. One of these trees landed on a house and caused minor roof damage.									
Seneca County									
Countywide	13	1430EST			0	0	25K		Thunderstorm Wind
Trees and power poles downed throughout the county.									
Lucas County									
Toledo Express Arpt	13	1435EST			0	0			Hail (0.75)
Three-quarter inch hail covered the ground.									
Crawford County									
Bucyrus	13	1445EST			0	0	50K		Thunderstorm Wind
Thunderstorm winds estimated at 60 mph blew the roof off of a barn four miles south of Bucyrus near State Route 4. The barn roof struck a passing car and landed in the middle of the road. The car was severely damaged, but the driver was unhurt.									
Huron County									
Countywide	13	1445EST			0	0	10K		Thunderstorm Wind
Several trees downed in Hartland and Clarksfield Townships.									
Lorain County									
Amherst	13	1445EST			0	0			Hail (0.88)
Crawford County									
Galion	13	1452EST			0	0			Hail (1.00)
Cuyahoga County									
North Olmsted	13	1500EST			0	0			Hail (0.88)
Lorain County									
Lorain	13	1500EST 1530EST			0	0			Flood
Thunderstorms dumped 1.6 inches of rain on the City of Lorain in less than one hour. Over a foot of standing water was reported on many streets and East 28th Street had to be closed for a period of time. Other streets with flooding included Popular, Olive, Oakdale and West 17th.									
Marion County									
Marion	13	1502EST			0	0	20K		Thunderstorm Wind
Several power poles were downed.									
Richland County									
Mansfield	13 31	1510EST 1510EST			0	0			Funnel Cloud
A brief funnel cloud was observed near the intersection of U.S. Highway 30 and Trimble Road. The funnel never came in contact with the ground and did not cause any damage.									
Cuyahoga County									
Cleveland	13	1512EST			0	0			Hail (0.75)
Cuyahoga County									
Cleveland	13	1515EST 1600EST			0	0			Flood
Thunderstorms dumped up to two inches of rain on Cleveland in less than one hour. Officially for the day, 1.53 inches of rain fell at Cleveland Hopkins International Airport. Many streets and underpasses were temporarily flooded including Interstate 71 which was under a foot of water near West 25th Street. Other streets that were flooded include Forbes Road, Brookpark Road and Tiederman Road.									
Lorain County									
Lorain	13	1515EST			0	0	20K		Thunderstorm Wind
Around a dozen trees were downed in and around Lorain. One tree landed on the roof of a house in Lorain and caused some damage.									
Morrow County									
Countywide	13	1517EST			0	0	10K		Thunderstorm Wind
Several trees downed.									

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
OHIO, North									
Cuyahoga County									
Lakewood	13	1518EST			0	0			Waterspout
A waterspout was sighted on Lake Erie just offshore from Lakewood. No damage was reported.									
Richland County									
Mansfield	13	1520EST			0	1	30K		Tstm Wind/Hail
A 65 mph thunderstorm wind gust was measured near the intersection of U.S. Highways 30 and 42 on the northeast side of Mansfield. Nickel size hail was also observed at that location. A sign at a fast food restaurant on the south side of Mansfield was blown down. The sign landed on a car smashing the windshield and injuring a 52 year old female inside. The woman was treated for cuts to her leg. A large tree fell across State Route 39 just southeast of Mansfield. Additional trees were downed throughout the county.									
Lorain County									
Avon Lake	13	1530EST			0	0	10K		Thunderstorm Wind
Many large trees downed.									
Medina County									
Valley City	13	1530EST			0	0	10K		Thunderstorm Wind
A few large trees were downed.									
Medina County									
Medina	13	1535EST			0	0			Hail (1.00)
Ashland County									
Ashland	13	1545EST			0	0	50K		Thunderstorm Wind
Over a dozen large trees were downed, many of them on the campus of Ashland University. A tree fell on a house and adjacent garage. Branches from the tree punctured the roof of the house allowing heavy thunderstorm rains to seep inside. A second garage nearby also sustained major roof damage and a third house lost part of a back porch to the high winds.									
Ashland County									
Countywide	13	1545EST			0	0			Hail (0.75)
Three-quarter inch hail reported at several locations.									
Knox County									
Mt Vernon	13	1545EST			0	0	60K		Thunderstorm Wind
Metal roofing was blown off of a building and several trees were knocked down in Mt. Vernon. One of the trees landed on a delivery truck doing extensive damage and a second landed on a house causing minor roof damage.									
Medina County									
Seville	13	1545EST			0	0			Hail (0.75)
Three-quarter inch hail reported near the intersection of Interstate 76 and State Route 3.									
Wayne County									
Countywide	13	1545EST			0	0	15K		Thunderstorm Wind
Trees downed throughout the county.									
Geauga County									
Countywide	13	1550EST			0	0	15K		Thunderstorm Wind
Trees downed throughout the county.									
Lorain County									
Lorain Co Regl Arprt	13	1556EST			0	0			Hail (1.00)
Cuyahoga County									
Countywide	13	1557EST 1604EST			0	0	20K		Thunderstorm Wind
A 61 mph thunderstorm wind gust was measured in Garfield Heights. Several trees were downed in Garfield Heights and also in nearby Cleveland Heights. A 70 mph thunderstorm wind gust was measured on the east side of Cleveland at 504 pm EDT.									
Lake County									
Countywide	13	1600EST			0	0	100K		Thunderstorm Wind
Trees and large limbs downed throughout the county including 40 in Madison Township alone. Part of a home in Willoughby was crushed by a large tree and a home in Mentor sustained major roof damage from a fallen tree. Three additional homes suffered minor roof damage in Madison Township.									
Summit County									
Akron Arprt	13	1611EST			0	0			Thunderstorm Wind (G51)
A 59 mph wind gust was measured at Akron Municipal Airport.									

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
OHIO, North									
Portage County									
Countywide	13	1615EST			0	0	20K		Thunderstorm Wind
Trees downed throughout the county with five downed in Ravenna alone.									
Summit County									
Akron	13	1615EST			0	0			Hail (1.00)
Hail reported near the intersection of Interstates 76 and 77.									
Medina County									
Medina	13	1620EST			0	0	30K		Thunderstorm Wind
Two trees downed near the intersection of Interstate 71 and State Route 18. One of the trees landed on a moving vehicle. The occupants of the car were uninjured.									
Richland County									
Mansfield	13	1621EST			0	0	60K		Thunderstorm Wind
Thunderstorms winds estimated at 60 mph blew the roof off of a house along Kentucky Avenue on the north side of Mansfield. The roofs of two other homes were partially blown off.									
Ashtabula County									
Countywide	13	1625EST			0	0	25K		Thunderstorm Wind
Many trees downed in Orwell, Rome and Geneva.									
Wayne County									
Wooster	13	1625EST			0	0	10K		Thunderstorm Wind
Two large trees were blown down on the south side of Wooster. One of the trees landed on a house and caused minor roof damage.									
Geauga County									
Countywide	13	1630EST			0	0	40K		Thunderstorm Wind
Several trees downed in the county. A large tree fell on a house in Chardon and poked several holes in the roof.									
Holmes County									
Countywide	13	1630EST			0	0	10K		Thunderstorm Wind
Several trees downed.									
Cuyahoga County									
Countywide	13	1631EST			0	0	75K		Thunderstorm Wind
Thunderstorm winds estimated at 60 to 70 mph downed trees throughout the county. A tree fell on two stopped school buses in Shaker Heights. The two drivers and seven children inside the buses were unhurt, but one of the buses sustained major damage. The second bus suffered only a few large dents to its roof. A large tree fell on a house in Lakewood, but caused only minor roof damage. Several trees were blown down along East 75th Street in Cleveland.									
Summit County									
Countywide	13	1631EST			0	0	40K		Thunderstorm Wind
Several large trees downed in Akron. A tree fell on a moving car in Tallmadge. A woman and child inside the car were unhurt, but the car was severely damaged.									
Stark County									
North Canton	13	1632EST			0	0	50K		Thunderstorm Wind
Ten to 15 power poles were downed by thunderstorm winds.									
Trumbull County									
Countywide	13	1645EST			0	0	40K		Thunderstorm Wind
Trees were downed in Leavittsburg, Warren and near the Youngstown-Warren Regional Airport. Trained spotters in Warren estimated winds at 60 mph. Several large trees were blown down in a Warren cemetery. These trees damaged around two dozen grave stones.									
Mahoning County									
Countywide	13	1650EST			0	6	60K		Thunderstorm Wind
Six high school football players were hurt and two hospitalised when an equipment shed collapsed in southern Mahoning County just to the north of Salem. The football players had entered the shed to seek protection from thunderstorm winds estimated at 65 mph. Many trees, a couple power poles and a large road sign were downed in Youngstown.									
Stark County									
Countywide	13	1705EST			0	0	30K		Thunderstorm Wind
Many trees downed in and around Canton with downed trees and power poles in Alliance. A tree fell on a moving car in Perry Township. The occupants of the car were uninjured.									
Ashtabula County									
Ashtabula	13	1745EST			0	0	25K		Thunderstorm Wind (G52)
Trained spotters estimated 60 mph winds in Ashtabula. A few trees were downed in an around the City of Ashtabula. One of the trees landed on a house trailer and caused some structural damage.									

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Estimated Damage	Character of Storm
					Killed	Injured	Property Crops

OHIO, Northwest

NONE REPORTED.

OHIO, Southeast

**OHZ066>067-
075>076-083>087**

Perry - Morgan - Athens - Washington - Jackson - Vinton - Meigs - Gallia - Lawrence

01	0000EST				0	0		
31	2300EST							Drought

The drought severity eased as monthly rainfall was near normal. Amounts of 2.5 to 3.0" were common. Ground water shortages were still a concern at the end of the month.

Gallia County

7 W Patriot

04	0110EST				0	0		Hail (0.88)
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Vinton County

Mc Arthur

13	1700EST				0	0	5K	Thunderstorm Wind
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Jackson County

Wellston

13	1710EST				0	0		Hail (1.00)
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Lawrence County

Kitts Hill

13	1715EST				0	0	5K	Thunderstorm Wind
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Gallia County

Vinton

13	1725EST				0	0	2K	Thunderstorm Wind
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OHIO, Southwest

Shelby County

Countywide

13	1415EST 1420EST				0	0	4K	Thunderstorm Wind (G50)
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Several trees were knocked down in the eastern part of the county.

Logan County

Lewistown

13	1420EST 1425EST				0	0	5K	Thunderstorm Wind (G54)
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Thunderstorm winds knocked down trees. Trees were also knocked down near Lakeview and East Liberty.

Montgomery County

Kettering

13	1430EST 1432EST				0	0		Hail (0.75)
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Montgomery County

New Lebanon

13	1439EST 1442EST				0	0	5K	Thunderstorm Wind (G50)
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Trees and power lines knocked down.

Union County

Richwood

13	1450EST 1456EST				0	0	3K	Thunderstorm Wind (G51)
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A barn was damaged and several trees were knocked down.

Clark County

4 NE Springfield

13	1455EST 1500EST				0	0	5K	Thunderstorm Wind (G50)
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Trees and powerlines were knocked down in the Northridge section of Springfield.

Greene County

Jamestown

13	1457EST 1459EST				0	0		Hail (0.75)
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Greene County

Xenia

13	1502EST 1510EST				0	0	4K	Thunderstorm Wind (G52)
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Trees were knocked down in town along with several trees downed in the eastern third of the county.

Hamilton County

3 N Cincinnati

13	1515EST				0	0		Hail (0.75)
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Report taken from the Spring Grove section of Cincinnati.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
OHIO, Southwest									
Hamilton County									
Hyde Park	13	1525EST 1530EST			0	0	5K		Thunderstorm Wind (G50)
									Trees and powerlines were knocked down.
Fayette County									
Bloomingsburg	13	1530EST 1535EST			0	2	50K		Thunderstorm Wind (G57)
									A downburst from a thunderstorm blew a mobile home on its side causing minor injuries to the two occupants. Trees and utility poles were also uprooted and knocked across main roads and railroad tracks.
Madison County									
London	13	1530EST 1540EST			0	0	4K		Thunderstorm Wind (G50)
									Numerous trees were knocked down.
Delaware County									
Countywide	13	1531EST 1540EST			0	0	3K		Thunderstorm Wind (G50)
									Trees and powerlines were knocked down in several places across the county.
Franklin County									
Westerville	13	1531EST			0	0	20K		Lightning
									A lightning strike created a house fire, causing extensive damage to one residence.
Clermont County									
Milford	13	1533EST 1535EST			0	0			Hail (0.75)
Fayette County									
Pancoastburg	13	1536EST 1539EST	0.1	25	0	0	30K		Tornado (F0)
									A brief touchdown flipped over several pontoon boats, destroying at least one. Several utility poles and trees were knocked down along with well-anchored signs being ripped off of a local business.
Franklin County									
Columbus	13	1539EST 1544EST			0	0	5K		Thunderstorm Wind (G50)
									Trees and powerlines were knocked down in the Blendon Township area northeast of the city.
Ross County									
1 W Lyndon	13	1553EST 1556EST			0	0	15K		Thunderstorm Wind (G53)
									A barn was blown down on equipment that was housed inside of it. A grain bin was blown off of its foundation at the same location. A garage was destroyed, as well as siding and roofing being peeled off of a residence.
Pickaway County									
1.5 W Circleville to 1 N Circleville	13	1600EST 1610EST	3.5	440	0	6	4M		Tornado (F3)
									A tornado touched down west of Circleville, pulling a small shed off of its foundation and destroying a section of a construction building. After this, the tornado lifted and then touched down in a more developed area in town. It destroyed a building housing two businesses and ripped the roof off of a section of a strip mall, ejecting furniture from inside the structure. A large sign weighing several hundred pounds was ripped from its foundation and blown twenty feet away. A tractor trailer with a load of 18 to 19 tons was blown over and dragged ten feet away from where it landed. The tornado then proceeded to a housing development where several homes were destroyed, several roofs ripped off, and garages either destroyed or moved from their foundations. Trees were twisted and broken off at their bases and carports were also torn from nearby houses.
Ross County									
Bourneville	13	1610EST 1613EST	0.1	25	0	0	10K		Tornado (F0)
									A brief touchdown knocked several trees down, felling one into a house.
Fairfield County									
Countywide	13	1615EST 1625EST			0	0	4K		Thunderstorm Wind (G50)
									Trees were knocked down across the county.
Brown County									
Georgetown	13	1620EST 1625EST			0	0	4K		Thunderstorm Wind (G52)
									Trees and powerlines were knocked down.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OHIO, Southwest

Highland County

Greenfield to Highland	13	1640EST 1645EST			0	0	25K		Thunderstorm Wind (G55)
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The side of the Greenfield Fire Department garage was blown out. Several trees were also knocked down in the Hillsboro area.

Adams County

Youngsville	13	1649EST 1659EST			0	0	12K		Thunderstorm Wind (G53)
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Several trees were knocked down. One landed on a car, another fell across a road causing a semi to jackknife.

Scioto County

2 W Portsmouth	13	1725EST 1728EST			0	0			Hail (0.75)
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Trees and powerlines were also knocked down by thunderstorm winds.

A cold front pushed east from Illinois and Indiana during the afternoon hours and combined with a vigorous upper level disturbance that dropped into the Ohio Valley from the lower Great Lakes region. These factors prompted a squall line to develop ahead of the cold front that moved southeast through the Wilmington Ohio (ILN) county warning area before entering northeast Kentucky and southeast Ohio.

OKLAHOMA, Eastern

Le Flore County

2 NW Page	03	1345CST			0	0			Hail (0.75)
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Le Flore County

2 NW Page	03	1345CST			0	0	0.10K		Thunderstorm Wind
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Tree limbs were blown down, and lawn furniture was blown around.

A southward-moving cold front encountered warm, moist air as it moved into southeast Oklahoma on the afternoon of October 3. This caused a line of scattered thunderstorms to develop. One of the thunderstorms in this line strengthened to severe limits across central Le Flore County, causing a report of marginally severe wind and hail.

Creek County

3 E Sapulpa	31	1615CST	0.5	50	0	0	2K		Tornado (F0)
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A tornado briefly touched down 3 miles east of Sapulpa west of the intersection of OK Hwy 117 and US Hwy 75. A shed was destroyed, and windows were blown out of a mobile home.

Creek County

3 SW Sapulpa	31	1623CST	0.5	50	0	0			Tornado (F0)
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A brief tornado touchdown occurred 3 miles southwest of Sapulpa. No damage was reported.

Creek County

4 N Kellyville	31	1635CST	0.5	50	0	0	0.50K		Tornado (F0)
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A tornado briefly touched down 4 miles north of Kellyville or 2 miles west of the junction of OK Hwys 33 and 66. There was some tree damage.

Creek County

4 S Mannford	31	1700CST	0.5	50	0	0	0.50K		Tornado (F0)
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There was a brief tornado touchdown near OK Hwy 48 south of Mannford, causing some tree damage.

An upper level low pressure system moving across southern Oklahoma created enough instability on its northern side for thunderstorms to develop within areas of rain. These thunderstorms were unusual in that they moved from east to west. Enough wind shear briefly developed for one of the thunderstorms to produce four tornadoes in Creek county.

OKLAHOMA, Extreme Southeast

NONE REPORTED.

OKLAHOMA, Panhandle

NONE REPORTED.

OKLAHOMA, Western, Central and Southeast

Stephens County

Comanche	04	0700CST			0	0	3K		Lightning
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Lightning struck the Comanche Water Tower, resulting in damage to monitoring equipment. Lightning also struck a transformer at the Comanche substation, resulting in loss of power throughout town.

Harmon County

7 SE Hollis	08	1525CST			0	0			Hail (0.75)
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Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	
OKLAHOMA, Western, Central and Southeast									
Harmon County									
6 SSE Gould to 9 SE Gould	08	1545CST 1615CST			0	0	640K		Hail (1.25)
Jackson County									
8 SW Duke to 7 SW Duke	08	1615CST 1620CST			0	0	160K		Hail (1.25)
Jackson County									
5 SSE Duke	08	1630CST			0	0			Hail (0.88)
Kiowa County									
7 S Cooperton	08	1646CST			0	0			Hail (0.88)
Hail accumulated to a depth of 5 to 6 inches on Highway 54 from its intersection with Highways 49 to 2 miles north of the intersection. The Department of Transportation was called out to clear the road.									
Comanche County									
Meers	08	1740CST			0	0			Hail (0.75)
Comanche County									
1 E Meers	08	1744CST			0	0			Hail (1.00)
Comanche County									
1 E Meers	08	1749CST			0	0			Hail (1.50)
Comanche County									
1 E Meers	08	1749CST			0	0			Thunderstorm Wind (G52)
Comanche County									
5 E Medicine Park	08	1900CST			0	0			Hail (0.88)
Comanche County									
5 E Medicine Park	08	1901CST			0	0			Hail (0.88)
Isolated areas of severe weather developed across portions of southwest Oklahoma during the afternoon and early evening of the 8th. One particular slow moving severe thunderstorm produced hail as large as half-dollars (1.25 inches), which destroyed cotton crop along a 5-mile swath from eastern Harmon County extending eastward into northwest Jackson County. Hail fell for up to 30 minutes in a few places, accumulating to a depth of 2 to 3 feet in some ditches. Nearly 3000 bales of cotton were destroyed, a market value of \$800,000.									
Dewey County									
2 W Putnam	29	1610CST			0	0			Hail (0.75)
Blaine County									
2 S Canton	29	1650CST			0	0			Hail (1.00)
Washita County									
1 S Foss	29	1705CST			0	0			Thunderstorm Wind (G52)
Kingfisher County									
5 W Lacey	29	1745CST			0	0			Hail (1.00)
Washita County									
4 NW Corn	29	1750CST			0	0			Hail (0.88)
Custer County									
4 S Weatherford	29	1754CST			0	0			Hail (1.50)
Custer County									
5 SW Weatherford	29	1805CST			0	0			Hail (1.00)
Caddo County									
Hinton	29	1825CST			0	0			Thunderstorm Wind (G52)
Tillman County									
4 S Tipton	29	1945CST			0	0			Thunderstorm Wind (G58)
Tillman County									
4 S Tipton	29	1950CST			0	0			Thunderstorm Wind (G55)
Kiowa County									
2 WNW Mountain Park	29	2005CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage	Property	Crops	Character of Storm
<u>OKLAHOMA, Western, Central and Southeast</u>											
Kiowa County											
2 WNW Mountain Park	29	2005CST			0	0					Thunderstorm Wind (G62)
Tillman County											
Tipton	29	2019CST			0	0					Hail (0.75)
Tillman County											
Tipton	29	2019CST			0	0		1.5K			Thunderstorm Wind (G64)
Comanche County											
3 W Medicine Park	29	2025CST			0	0					Thunderstorm Wind (G56)
Comanche County											
3 W Medicine Park	29	2030CST			0	0					Thunderstorm Wind (G57)
Comanche County											
Lawton	29	2046CST			0	0					Thunderstorm Wind (G61)
Comanche County											
Cache	29	2100CST			0	0		15K			Thunderstorm Wind
Comanche County											
Elgin	29	2100CST			0	0		0.10K			Thunderstorm Wind
Stephens County											
1 WSW Marlow	29	2115CST			0	0					Thunderstorm Wind (G57)
Stephens County											
Marlow	29	2115CST			0	0		20K			Thunderstorm Wind
Grady County											
Rush Spgs	29	2130CST			0	0					Thunderstorm Wind (G61)
Cleveland County											
Norman	29	2140CST			0	0					Thunderstorm Wind (G52)
The gust occurred at the intersection of I-35 and Indian Hills Road.											
Cleveland County											
Norman	29	2140CST			0	0					Thunderstorm Wind (G50)
The gust was measured at the NWS Forecast Office.											
Cleveland County											
Norman	29	2145CST			0	0					Thunderstorm Wind (G57)
The gust was recorded at the Storm Prediction Center/National Severe Storms Laboratory.											
Cleveland County											
Norman	29	2145CST 2155CST			0	0		200K			Thunderstorm Wind
McClain County											
Blanchard	29	2155CST			0	0					Thunderstorm Wind (G52)
Oklahoma County											
Tinker Afb	29	2155CST			0	0					Thunderstorm Wind (G51)
Garvin County											
Lindsay	29	2200CST			0	0		0.50K			Thunderstorm Wind (G61)
Pottawatomie County											
4 S Mc Loud	29	2210CST			0	0		0.10K			Thunderstorm Wind
Pottawatomie County											
Tecumseh	29	2215CST			0	0		0.10K			Thunderstorm Wind
Love County											
2 W Courtney	30	0100CST			0	0		0.01K			Thunderstorm Wind

Thunderstorms produced scattered areas of severe weather across portions of western and central Oklahoma from the afternoon of the 29th through the early morning of the 30th. Between 2145 CST and 2155 CST widespread wind damage occurred across the east and northeast sides of Norman in Cleveland County. The damage area was bounded on the north along a line from Porter and Franklin to Indian Hills Road and 60th, and on the southeast along a line from Alameda and 24th to Tecumseh and 60th. A large portion of the roof from the Robin Hills School was blown off. Significant water damage occurred when rain fell inside the building. Major

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OKLAHOMA, Western, Central and Southeast

structural damage also occurred to the Meiser's Feed Store. In addition, about 1 dozen electric poles, numerous trees, and fences were blown down. Nearly 25,000 electric customers were left without power for several hours. Some customers did not have power restored for a couple of days. In Marlow in Stephens County the roof of a house was partially blown off, while minor roof damage occurred to the Marlow Middle School. Numerous trees were also downed in Marlow. A shed was blown across the road, and power lines were downed in Tipton in Tillman County, while in Comanche County, dozens of utility lines were downed in Cache, and trees were downed in Elgin. Numerous trees and power lines were downed in Lindsey in Garvin County. One large tree was blown over 4 miles south of McLoud and in Tecumseh on E. Highland St., both in Pottawatomie County, and large tree limbs were downed 2 miles west of Courtney in Love County.

OREGON, Central and East

Wasco County

20 SW Maupin	01	0000PST			0	0			Wild/Forest Fire
	02	1200PST							

A prescribed burn grew out of control when unexpected gusty winds of 15 mph intensified the fire. This fire burned 6100 acres of forest near He He Butte. Smoke and numerous firefighting vehicles closed Hwy 26 for several days.

ORZ046

Blue Mountains

	02	1300PST			0	0	1K	10M	Dust Storm
		2200PST							

Yes indeed...this is quite the dust storm!!!

This is a test narrative for a test case of imaginary dust storm that may or may not have happened somewhere in or around the foothills of the blues mountains. This storm may or may not be real!!!

ORZ019

	04	1240PST			0	0	4K		High Wind
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High winds that blew a tree onto power lines caused a power outage that affected around 1000 customers west of Union, which is located in the Grande Ronde Valley.

OREGON, Northwest

NONE REPORTED.

OREGON, Southeast

NONE REPORTED.

OREGON, Southwest

Coos County

Countywide	01	0001PST			0	0			Wild/Forest Fire
	02	0700PST							

See below

Curry County

Countywide	01	0001PST			0	0			Wild/Forest Fire
	02	0700PST							

See below.

Douglas County

Countywide	01	0001PST			0	0			Wild/Forest Fire
	02	0700PST							

See below.

Jackson County

Countywide	01	0001PST			0	0			Wild/Forest Fire
	02	0700PST							

See below.

Josephine County

Countywide	01	0001PST			0	0			Wild/Forest Fire
	02	0700PST							

See below

A Red Flag Warning was issued at 1500 PDT on 09/30/99 for fire zones 615/616/618/619/620. This included all of Coos and Curry counties, all but the southern portion of Josephine county, the western half of Douglas county, and the far western portions of Jackson county. The Warning was issued for expected gusty northeast winds and low humidity recoveries. Zone 616 (interior Douglas county) was dropped from the Warning area at 01/0700, and zone 615 (Coos county with the exception of the far southern portion) was dropped at 01/1200. The Warning for the remainder of the area was cancelled at 0700 PDT on 10/02/99.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OREGON, Southwest

No major fire developed during the Warning period, but a major fire, allegedly set by an arsonist, developed on 10/04/99 near Mount Emily, which is just east of Brookings.

Klamath County

Countywide	04	0700PST 2315PST			0	0			Wild/Forest Fire
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See below.

Lake County

Countywide	04	0700PST 2315PST			0	0			Wild/Forest Fire
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See below.

A Red Flag Warning was issued for fire weather zones 624/625 at 0700 PDT on 10/04/99 and cancelled at 2315 PDT on 10/04/99. The warning was for low humidities combined with gusty south winds. The warning was cancelled after the winds subsided and humidities recovered.

Curry County

Brookings	04 07	0800PST 0800PST			0	0			Wild/Forest Fire
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See below.

A major wildfire, the largest in southern Oregon this year, occurred on the slopes of Mount Emily, just east of Brookings, Oregon. It is not known when the so-named Repeater fire started, but it was first reported on 10/04/99, and burned about 2000 acres before it was contained on 10/07/99. No property damage, injuries, or deaths were reported, but the estimated cost of fighting the fire was near \$6,000,000.

The fire was allegedly caused by an arsonist. A suspect was arrested on 10/08/99.

Curry County

Countywide	14 17	1535PST 2030PST			0	0			Wild/Forest Fire
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See below.

Jackson County

Countywide	14 17	1535PST 2030PST			0	0			Wild/Forest Fire
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See below.

Josephine County

Countywide	14 17	1535PST 2030PST			0	0			Wild/Forest Fire
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See below.

Coos County

Countywide	15 16	0630PST 0645PST			0	0			Wild/Forest Fire
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See below

Douglas County

Countywide	15 16	0630PST 0645PST			0	0			Wild/Forest Fire
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See below.

A Red Flag Warning was issued at 1535 PDT on 10/14 for fire weather zones 618/619/620. At 0630 PDT on 10/15, it was expanded to zones 615/617/621/622/623. At 0645 PDT on 10/16, the Warning was cancelled for zones 615/617/618/621/622/623. At 2030 PDT on 10/17, the Warning was cancelled for zones 619/620.

The Warning was issued for gusty winds and poor overnight relative humidity recoveries, but no major fires developed.

ORZ023>024-026

Central Douglas County - Eastern Curry County & Josephine County - Jackson County

Countywide	14 15	2120PST 0800PST			0	0			Extreme Cold
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See below.

A Frost Warning was issued for the Umpqua and Rogue Basins. Most of the reported low temperatures were in the middle 20s to upper 30s, and frost did occur this morning. However, one station reported a low temperature that was below 30 degrees and greater than 10 degrees below normal (Ashland, 27, 12 degrees below normal), which met the Freeze Warning criteria. However, the freeze area was probably isolated.

East of the Cascades, Paisley reported a low of 14 degrees (20 degrees below normal) and Silver Lake reported a low of 15 degrees (15 degrees below normal). This readings met the freeze warning criteria for those zones, but the remaining reported lows did not...so the conditions apparently were not widespread.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OREGON, Southwest

ORZ023>024-026 Central Douglas County - Eastern Curry County & Josephine County - Jackson County

15 1458PST 0 0 Extreme Cold
16 0800PST

See below.

A Frost Warning was issued for the Rogue and Umpqua Basins. Most of the reported low temperatures were in the middle 20s to upper 30s, so frost probably did occur this morning.

Three stations in the Rogue Valley and three stations in the Umpqua Basin met Freeze Warning criteria, and a Warning probably should have been issued for those zones.

Additionally, one station each in a coastal zone and in south central Oregon also met freeze warning criteria, but the very low temperatures did not appear to be widespread in these zones. A frost warning would have probably been sufficient for the coastal zones, but none was issued. The lows are listed below:

Station	Observed Low	Normal Low	Departure
ORZ024 Grants Pass	26	40	-14
ORZ026 Medford	27	40	-13
Ashland	27	39	-12
ORZ023 Elkton	30	45	-15
Drain	29	42	-13
Riddle	28	42	-14
ORZ021 Powers	29	43	-14
ORZ031 Silver Lake	14	30	-16

ORZ023>024-026 Central Douglas County - Eastern Curry County & Josephine County - Jackson County

16 0505PST 0 0 Extreme Cold
17 0800PST

See below

A Frost Warning was issued for the Rogue and Umpqua basins. Reported low temperatures were mostly in the middle 20s to upper 30s, so frost probably did occur this morning.

However, several stations, listed below, met Freeze Warning criteria. A Warning probably should have been issued for both the Rogue and Umpqua Basins, as well as the interior coastal valleys.

Station	Observed Low	Normal Low	Departure
ORZ023 Drain	28	42	-14
Riddle	28	42	-14
Elkton	29	44	-15
ORZ024 Grants Pass	29	40	-11
ORZ021 Coquille	30	43	-13
Powers	28	43	-15

ORZ029-031 Klamath Basin - Central & Eastern Lake County

23 1843PST 0 0 High Wind (G70)
2030PST

Spotter KL78 reported winds 40 MPH gusting to 60 to 70 MPH.

Based on the above spotter reports, a High Wind Warning was issued for zones ORZ029, ORZ030, and ORZ031 at 2031 PDT on 10/27 and cancelled at 0235 PDT on 10/28. No other verifying reports were received.

ORZ021-021-021-021-021-024 South Central Oregon Coast - Eastern Curry County & Josephine County

27 1200PST 0 0 High Wind (G60)
28 0200PST

Cape Arago winds were south 41KT gusting to 55 KT.

Winds meeting high wind criteria were reported at Cape Arago, but no warning was issued for this system. This was the only station that reported high winds (Cape Blanco was out of service at this time), but a high wind warning probably should have been issued for the coastal headlands.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OREGON, Southwest

The 10/28/99 edition of the Grants Pass Daily Courier indicated that many trees were downed in the Grants Pass area due to strong winds. No observations were available, so the magnitude of the winds are unknown. 60 MPH was listed on the episode line since it was a required field, but it is just an estimate.

ORZ027>028

South Central Oregon Cascades - Siskiyou Mountains & Southern Oregon Cascades

27	1214PST				0	0			
28	0310PST								Heavy Snow

See below

This warning was issued because this event was expected to bring the first significant snow of the season to the mountains. Only 4 to 6 inches of snow was expected above 5000 feet, and up to 4 inches from 4000 to 5000 feet. These amounts did not verify, but it did turn out to be the first significant snow event of the season.

PACIFIC

Guam

Andersen Afb	04	1028SST 1031SST			0	0			Funnel Cloud
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Funnel cloud was briefly observed 5 miles west of Andersen Air Force Base.

Guam

Countywide	14	2200SST			0	0			Urban/Sml Stream Fld
	15	0000SST							

Rainshowers and thunderstorms moved across the island of Guam. Frequent lightning was observed during much of the night from 2130 to midnight. An open air concert being performed by the group UB40 was totally washed out as heavy rains fell even before the event

began. Rainfall at the National Weather Service Office in Tiyan between 2200 and midnight amounted to 0.79 of an inch.

Guam

Central Portion	16	0400SST 1600SST			0	0			Urban/Sml Stream Fld
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Rainshowers moving across the island brought 0.85 of an inch of rain to the National Weather Service office between 0400 and 1600.

PENNSYLVANIA, Central

Warren County

Tidioute	13	1740EST			0	0	20K		Thunderstorm Wind
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About 100 trees were blown down on Route 62, northeast of Tidioute. Power poles were also snapped.

Warren County

Warren	13	1802EST			0	0	20K		Tstm Wind/Hail
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Wind, rain, and lightning roared across Warren County, taking down trees in the city of Warren and many other locations. Two major highways were closed temporarily, many residents were without power, and a train was stranded. Nickel-sized hail was also reported in Warren.

Warren County

Clarendon	13	1805EST			0	0	10K		Thunderstorm Wind
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Many trees were blown down in the Clarendon area, south of Warren.

Elk County

Ridgway	13	1805EST			0	0			Hail (1.75)
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Golf ball sized hail fell in Ridgway.

Mckean County

Bradford	13	1830EST			0	0	10K		Thunderstorm Wind
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Trees were blown down.

Potter County

Austin	13	1846EST			0	0	5K		Thunderstorm Wind
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Trees down.

Mckean County

Smethport	13	1855EST			0	0	5K		Thunderstorm Wind
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Trees were down on Route 46 near Norwich, south of Smethport.

Elk County

St Marys	13	1858EST			0	0	5K		Thunderstorm Wind
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Trees down.

Clearfield County

Troutville	13	1920EST			0	0	5K		Thunderstorm Wind
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Trees down.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Estimated Damage	Character of Storm
					Killed	Injured	Property

PENNSYLVANIA, Central

Potter County

Galeton 13 1920EST 0 0 5K Thunderstorm Wind
Trees down.

Cambria County

Spangler 13 1930EST 0 0 5K Thunderstorm Wind
Trees down in Spangler and Barnesboro.

Somerset County

Jerome 13 1930EST 0 0 5K Thunderstorm Wind
Trees down.

Potter County

Carter Camp 13 1945EST 0 0 5K Thunderstorm Wind
Trees down on road.

Clinton County

Farwell 13 1955EST 0 0 5K Thunderstorm Wind
Trees down.

Huntingdon County

Neffs Mills 13 2010EST 0 0 5K Thunderstorm Wind
Trees down.

Blair County

Altoona 13 2015EST 0 0 5K Thunderstorm Wind
Route 22, between Altoona and Geeseytown, was closed by downed trees.

Tioga County

Morris 13 2020EST 0 0 5K Thunderstorm Wind
Trees were blown down in Morris. A tree fell on a cabin, damaging the roof of the structure.

Centre County

Stormstown 13 2030EST 0 0 5K Thunderstorm Wind
Trees down.

Mifflin County

Lewistown 13 2035EST 0 0 5K Thunderstorm Wind
Couple of trees down north of Lewistown and in the "narrows" of Route 322, southeast of the city.

Juniata County

5 NW Mifflintown 13 2040EST 0 0 5K Thunderstorm Wind
Trees were blown down in the "narrows" of Route 322 about 5 miles northwest of Mifflintown. The trees took down powerlines and backed up traffic for miles.

Union County

Mifflinburg 13 2055EST 0 0 5K Thunderstorm Wind
Trees down in Buffalo Township, east of Mifflinburg.

Lycoming County

Williamsport 13 2100EST 0 0 10K Thunderstorm Wind
Trees down.

PENNSYLVANIA, East

NONE REPORTED.

PENNSYLVANIA, Northeast

NONE REPORTED.

PENNSYLVANIA, Northwest

Erie County

Erie 13 1640EST 0 0 20K Thunderstorm Wind
Many trees downed in the City of Erie.

Crawford County

Countywide 13 1720EST 0 0 20K Thunderstorm Wind
Trees downed in Meadville, Titusville and Townville. Several power poles were knocked down in Centerville.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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PENNSYLVANIA, Northwest

Erie County

Countywide	13	1745EST			0	0	25K		Thunderstorm Wind
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Trees downed in Lake City, Albion, Platea and Edinboro. Three power poles were also snapped in Albion.

PENNSYLVANIA, West

Mercer County

Countywide	13	1710EST 1740EST			0	0	15K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees across the county.

Lawrence County

Countywide	13	1745EST 1755EST			0	0	50K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees and power lines across the county. A barn was also blown down in Plain Grove.

Mercer County

Countywide	13	1745EST 1800EST			0	0	15K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees and power lines across the county. A few homes in the towns of Farrell and Pardoe reported minor damage from the downed trees.

Butler County

Countywide	13	1800EST 1815EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees and power lines across the county.

Venango County

Countywide	13	1800EST 1810EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees and power lines across the county.

Beaver County

Countywide	13	1805EST 1815EST			0	0	50K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees and power lines across the entire county. The town of Ambridge was especially hard hit, as part of a metal roof was blown off of a factory, and several other businesses reported minor damage.

Jefferson County

Countywide	13	1820EST 1830EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees and power lines across the county.

Allegheny County

2 S Verona	13	1825EST			0	0	3K		Thunderstorm Wind
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Thunderstorm winds downed several trees.

Armstrong County

5 N Kittanning	13	1830EST			0	0	3K		Thunderstorm Wind
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Thunderstorm winds downed several trees and power lines.

Washington County

Muse	13	1845EST			0	0	3K		Thunderstorm Wind
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Thunderstorm winds downed several trees and power lines.

Washington County

Venetia	13	1845EST			0	0	3K		Thunderstorm Wind
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Thunderstorm winds downed several trees and power lines.

Westmoreland County

10 W Greensburg	13	1850EST			0	0	3K		Thunderstorm Wind
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Thunderstorm winds downed several trees and power lines.

Indiana County

Countywide	13	1920EST 1930EST			0	0	10K		Thunderstorm Wind
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Thunderstorm winds downed numerous trees and power lines across the county.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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PUERTO RICO

Guayama

Countywide	01	1200AST 1400AST			0	0			Urban/Sml Stream Fld
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Civil Defense indicated that a temporarily bridge collapsed in Barranquas sector in Guayama due to heavy rains. In addition, several streets were reported flooded in downtown Guayama and the Nigua river in Arroyo went out of its banks near Pitaya sector.

San Juan

Southwest Portion	01	2300AST			0	0			Flood
	02	0200AST							

Civil Defense indicated flooding in Cayey and Caguas along La Plata river.

Ponce

Villalba	06	1200AST 1400AST			0	0			Heavy Rain
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A landslide was reported in Villalba.

Ponce

Countywide	09	1300AST 1500AST			0	0			Urban/Sml Stream Fld
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Civil Defense notified street flooding in Guayanilla and Penuelas.

Ponce

Penuelas	12	1300AST 1500AST			0	0	5K		Urban/Sml Stream Fld
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Civil Defense reported several houses flooded in Penuelas. A small stream was reported out of its banks and a cemetery was affected by landslides.

Humacao

Ceiba	13	1130AST 1145AST			0	0			Waterspout
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Civil Defense personnel sighted three waterspouts five miles southeast of Ceiba.

Aguadilla

San Sebastian	13	1200AST 1400AST			0	0	3K		Urban/Sml Stream Fld
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A house in San Sebastian was partially flooded due to poor drainage.

Arecibo

Central Portion	16	1400AST 1700AST			0	0	10K		Flash Flood
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San Juan

Countywide	16	1400AST 1700AST			0	0			Flash Flood
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Strong thunderstorms developed during the afternoon hours across the central sections of Puerto Rico. Various streams went out of their banks in Utuado, Toa Baja, Barranquitas, Vega Alta and Corozal flooding nearby roads and streets and making some of these roads impassable. Hail was reported in Aibonito and Lares and in Utuado a road was blocked by landslides and another road by fallen trees. Also, in Utuado a car with its occupants was swept away in a small stream. They were rescued later unharmed.

PRZ013-069-113-123-127

Arecibo - Humacao - Ponce - Guayama - San Juan

20	2200AST				0	0	20K		Hurricane
21	2300AST								

Hurricane Jose reached the northern Leeward Islands Wednesday night, October 20. As Jose continued to move to the northwest it weakened and by 1100 am Thursday morning Jose was downgraded to Tropical Storm. On its closest point as a Hurricane, Jose passed just to the east northeast of St. Thomas at 800 am Thursday morning, or 40 miles east of Culebra, 65 miles east of Fajardo and 95 miles east of San Juan. As a Tropical Storm, Jose passed about 55 miles north northeast of San Juan by 200 pm Thursday afternoon.

Tropical storm force winds and numerous rain bands affected the eastern sections of Puerto Rico including the islands of Culebra and Vieques during most of Thursday. In Luquillo, Emergency Management Agency indicated sustained winds from 40 to 45 mph with gusts to 55 mph at around 655 am on October 21. In San Juan maximum sustained winds were 23 mph at 600 am Thursday morning with wind gust of 30 mph and in Ceiba maximum sustained winds were at 28 mph with winds gusts of 37 mph at 800 am. These winds knock down power lines, trees and bent street signs in Culebra and Fajardo. Heavy rainfall between three to four inches across eastern Puerto Rico caused that Blanco River in Naguabo to overflow its banks. Landslides were reported in Utuado, Carolina and Villalba.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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PUERTO RICO

San Juan

Guaynabo	23	1200AST 1330AST			0	0			Urban/Sml Stream Fld
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Street flooding was reported in Buchanan sector in Guaynabo.

Humacao

Rio Grande	24	1345AST 1400AST			2	0			Heavy Rain
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Heavy Rain across the Sierra de Luquillo Mountains produced a water rush over Espiritu Santo river in Rio Grande. Two people drowned when they were swept by the waters. M37IW, F22IW

Humacao

Naguabo	25	1200AST 1400AST			0	0			Urban/Sml Stream Fld
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San Juan

Cayey	25	1200AST 1400AST			0	0			Urban/Sml Stream Fld
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A small stream in Cayey went out of its banks flooding a nearby road. In Naguabo road 31 was reported flooded due to heavy rains.

San Juan

Aguas Buenas	25	1800AST 1900AST			0	0			Tstm Wind/Hail
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Long period of small hail was reported.

Guayama

Central Portion	29	1200AST 1500AST			0	0			Urban/Sml Stream Fld
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Humacao

Central Portion	29	1200AST 1500AST			0	0			Urban/Sml Stream Fld
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Heavy rains flooded several roads and highways in Humacao, Naguabo and Las Piedras. Local police also reported that the Guamani river in Guayama overflowed its banks dragging a car and its occupants into the water. They were rescued later unharmed.

San Juan

Central Portion	31	1200AST 1400AST			0	0			Urban/Sml Stream Fld
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Urban flooding was reported over the San Juan Metropolitan area.

RHODE ISLAND

RIZ001>007

Northwest Providence - Southeast Providence - Western Kent - Eastern Kent - Bristol - Washington - Newport

14	1000EST 2000EST				0	0			Strong Wind
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Strong northwest winds, gusting as high as 50 mph, buffeted Rhode Island in the wake of a strong cold front. There were scattered reports of downed tree branches and power lines, as well as a couple of downed trees. About 7,300 customers lost power across the state, but most of those were located in Cranston and Johnston when a tree fell on a main feeder line leading from a substation.

RIZ006>007

Washington - Newport

18	1000EST 1800EST				0	0			Strong Wind
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The remnants of Hurricane Irene brought strong winds to coastal Rhode Island as the storm passed east of Nantucket. Wind gusts of 45 to 55 mph were common. There were no reports of damage.

SOUTH CAROLINA, Central

NONE REPORTED.

SOUTH CAROLINA, North Coastal

Georgetown

County

Georgetown to Murrells Inlet	17	0610EST 2130EST			0	0			Flood
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Horry County

North Myrtle Beach to Nixonville	17	0610EST 2130EST			0	0			Flood
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Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH CAROLINA, North Coastal

Marion County

Mullins to Britton Neck	17	1245EST			0	0			Flood
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As the center of Hurricane Irene, about 60 miles offshore, moved up the coast on the 17th, winds gusted around 30 mph on the beaches. Rainfall 5 to 6 inches caused flooding mainly along coastal counties. In Horry County, flooding was most extensive in the Cherry Grove area of North Myrtle Beach, and also in the area from Myrtle Beach to Surfside Beach. Road closures were mostly in the Cherry Grove area.

In Georgetown County, flooding caused road closures in the Murrells Inlet area, at Litchfield Beach and in the city of Georgetown. A few washouts were reported in the western part of the county.

In Marion County, 2 to 3 inches of water were in many yards by early afternoon, and by late afternoon there were many flooding reports.

SOUTH CAROLINA, Northwest

SCZ001>014-019 Northern Oconee - Northern Pickens - Northern Greenville - Southern Oconee - Southern Pickens - Southern Greenville - Spartanburg - Cherokee - York - Anderson - Abbeville - Laurens - Union - Chester - Greenwood

01	0000EST				0	0			Drought
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The return of some rainfall as well as lower evaporation rates due to the change of seasons, resulted in the drought easing somewhat. Drought classifications were lowered in some cases, and some places lifted water restrictions. However, the drought had not ended by the end of the month.

Oconee County

Tokena Xrds	04	0845EST	0.1	25	0	0			Tornado (F0)
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Greenville County

West Portion to Central Portion	04	0900EST 1200EST			0	0			Flash Flood
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Greenville County

East Portion	04	1000EST 1600EST			0	0			Flash Flood
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An area of showers and thunderstorms crossed the Upstate during the morning in advance of a cold front. Just enough wind shear existed in the atmosphere to cause one of the thunderstorms embedded in a thin squall line to become severe, and produce a weak, short-lived tornado. Minimal damage occurred with only numerous 3 to 4 inch branches torn off trees. A nearby store owner heard a roaring sound pass overhead, which in combination with radar imagery, leads the National Weather Service to log this event as a small, weak tornado.

Cloudbursts caused flash floods to develop across Greenville county as 3 to 4.5 inches of rain fell within 4 hour period. First, western and central portions were affected as nearly all streams and creeks in the city overflowed their banks. Cars were trapped and water flowed into businesses and homes...mainly on Augusta, White Horse and Haywood Roads. One school was flooded and Laurel Creek near Laurens Road and Interstate 85 flooded. The Reedy River went from normal flow to an above flood stage flow in about an hour. Flooding evolved more slowly on the Eastside, including places such as Taylors, Greer and Five Forks. Water flowed into houses and cars were trapped in these areas as streams such as Brushy Creek, Peters Creek, Horspen Creek, and Gilder Creek all swelled out of their banks.

Greenville County

Greenville to Simpsonville	10 11	1900EST 1100EST			0	0			Flood
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Anderson County

Anderson	10 11	2000EST 1100EST			0	0			Flood
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Spartanburg County

Reidville to Spartanburg	10 11	2000EST 0500EST			0	0			Flood
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Abundant tropical moisture flowed north across the Southeast U.S. ahead of a slow-moving front. Heavy rain fell all day in the Upstate, causing flash flood conditions to develop by mid-evening. In Greenville county, the Reedy River flooded near downtown Greenville. Other small streams (i.e. Gilder Creek) overflowed their banks, flooding and briefly closing roads south of Greer and east of Simpsonville. Downstream, the Reedy River continued to flood after 6 am on the 11th, causing some road and bridge closings. In Spartanburg county, small streams rose out of their banks primarily on the west side of Spartanburg, flooding many roads. Urban flooding occurred in the city itself with manhole covers popping off. In Anderson county Whittner Creek and others flooded the downtown district. The Broadway Lake area also experienced roads that were flooded.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH CAROLINA, Northwest

SCZ006-010 Southern Greenville - Anderson

	11	1100EST			0	0				Flood
	12	0500EST								

Rather unusual flooding persisted for 24 hours or more after the rain from the previous day had ended. The Reedy River continued to flood downstream, causing at least one road to be closed northwest of Hickory Tavern. As crests slowly moved downstream in Anderson county, some evacuations were necessary, but most problems were found in and around the city of Anderson.

SOUTH CAROLINA, South Coastal

SCZ044>045-050 Dorchester - Berkeley - Charleston

	17	0000EST 2300EST			0	0				Hurricane
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Charleston County

	17	0930EST 1330EST			0	0				Flood
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Berkeley County

	17	0940EST 1330EST			0	0				Flood
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Dorchester County

	17	0940EST 1330EST			0	0				Flood
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Three to five inches of rain fell across the tri-county area during the morning and early afternoon of October 17, associated with the rainbands from Hurricane Irene. Minor street flooding was reported by emergency management personnel across Charleston, Dorchester, and Berkeley counties. The highest wind gust, 48 mph, occurred in downtown Charleston on October 17 at 154 am. Minor beach erosion occurred along the Charleston county coast line, and isolated trees down and sporadic power outages occurred across Charleston and Berkeley counties.

SOUTH DAKOTA, Central and North

SDZ015-034>037 Dewey - Sully - Hughes - Hyde - Hand

	01	0300CST 1400CST			0	0				Heavy Snow
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A narrow band of 6 to 8 inches of snow fell in central South Dakota from the early morning hours to the early afternoon hours. The heavy snow resulted in the downing of numerous tree branches, slushy roads and low visibilities which affected travel and caused several school delays. Snowfall amounts included, 6 inches at Highmore and Blunt, 7 inches at Isabel, and 8 inches at Onida and Miller.

Grant County

	27	1636CST 2330CST			0	0				Wild/Forest Fire
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Due to the extremely dry and windy conditions, a large fire started on a farm northwest of Milbank. The smoldering from tree branches and leaves burned the previous day had caught the adjacent cornfield on fire. The fire then spread to a hayfield. The hayfield and cornfield were destroyed. The fire then spread to three farm buildings and burned them to the ground before it was brought under control.

Corson County

	31	1200CST 2359CST			0	0				Wild/Forest Fire
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Due to the extremely dry and windy conditions, a large grassland fire began as a result of an electrical short from a waterwell. Strong south winds caused the fire to rapidly spread north towards the community of Bullhead. As a result, some elderly people and those with respiratory problems had to be evacuated from Bullhead. The wind then shifted to the northwest during the evening and increased rapidly causing the fire to spread southeast along the Grand River towards two farms. One farm family had to be evacuated as the fire came within one mile of their home. The fire destroyed 7,500 to 10,000 acres of grassland along with many fences and haybales. Forty fire fighting units working over 20 hours a day finally brought the fire under control in the afternoon of November 2nd.

Brown County

	31	1930CST 2330CST			0	0				Wild/Forest Fire
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Due to the extremely dry and windy conditions, a controlled burn of leaves at a rubble site just south of Groton got out of control as it jumped to the nearby grassland. With the winds strong from the south, the fire spread towards the city of Groton. As a result, residents on the south side of Groton were notified of possible evacuations. With the great effort of many fire fighting units along with the winds dying down and shifting to the northwest, a disaster was averted.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH DAKOTA, Southeast

SDZ038>040-056 Beadle - Kingsbury - Brookings - Moody

01 0600CST 0 0 40K Heavy Snow

An early season snowfall of 4 to 8 inches caused damage to trees and power lines because of the heavy, wet nature of the snow. A few power outages occurred.

SOUTH DAKOTA, West

SDZ001>002-014 Harding - Perkins - Ziebach

01 0030MST 0 0 Heavy Snow
0700MST

Six to twelve inches of snow fell in a narrow band across the southern half of Harding and Perkins Counties and northern Ziebach County. Hundreds of trees that still had leaves on them had large branches broken off by the heavy, wet snow.

SDZ013>014-031>032 Meade Co. Plains - Ziebach - Pennington Plains - Haakon

27 0943MST 0 0 High Wind (G59)
1620MST

SDZ001>002-012>014-025>026-030>032 Harding - Perkins - Butte - Meade Co. Plains - Ziebach - Northern Foot Hills - Central Foot Hills - Custer Plains - Pennington Plains - Haakon

31 1730MST 0 0 High Wind (G62)
2345MST

A strong cold front moved through the region. Two semi-trailers were flipped over by the high wind gusts on Interstate 90 near Kadoka. Power lines in northeastern Meade County were blown down. The sparks from these lines ignited a fire which burned 15,000 acres of rangeland. It covered an area from 8 miles west of Faith, SD to 12 miles southeast of Faith, SD. 300 tons of hay were destroyed as well as several vacant outbuildings, fencing and corrals. Flames were reported to be as high as 40 feet at the head of the fire.

TENNESSEE, Central

NONE REPORTED.

TENNESSEE, East

Grainger County

Buffalo Spgs 04 1538EST 0 0 Hail (0.75)
1638EST

Jefferson County

3 W White Pine 04 1605EST 0 0 Hail (0.75)
3/4" hail reported near the intersection of highway 341 and I-81.

Jefferson County

White Pine 04 1625EST 0 0 50K Thunderstorm Wind
Widespread damage near and along Main Street. Numerous trees, powerlines and signs blown down. Minor damage to a few homes in the area and a chainlink fence blown down at a ball field. Around 800 customers were without power for about 2 1/2 hours after the storm. Industrial Carving on Zimmerman and Mill Streets had the roof blown off and a rear wall knocked down. Part of the roof at White Pine Lumber and Planing was blown off.

Sullivan County

(Tri)Tri City Arpt B 04 1700EST 0 0 Hail (0.88)

Sullivan County

Bluff City 04 1725EST 0 0 10K Thunderstorm Wind
A few trees blown down.

TENNESSEE, West

NONE REPORTED.

TEXAS, Central

NONE REPORTED.

TEXAS, Central Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, Extreme West

NONE REPORTED.

TEXAS, Mid - South

NONE REPORTED.

TEXAS, North

Collin County

Allen	09	0600CST			0	0	5K		Lightning
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Lightning started a fire in a two story house.

Young County

Olney	29	2300CST			0	0	5K		Thunderstorm Wind
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Fences were blown down and the top of an oil storage tank was blown off.

Jack County

Bryson	29	2305CST			0	0	25K		Thunderstorm Wind
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Thunderstorm winds blew the roof off the City Hall. Chimneys were blown down, a pavilion and concession stand was unroofed, and trees were blown down.

Young County

Loving	29	2310CST			0	0	5K		Thunderstorm Wind
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Fences were blown down and the top of an oil storage tank was blown off.

Jack County

2 NW Cundiff	29	2345CST			0	0	5K		Thunderstorm Wind
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A large car trailer was blown over by thunderstorm winds.

TEXAS, North Panhandle

Randall County

11 NE Canyon	07	1603CST			0	1			Lightning
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A fourteen-year old boy was critically injured in the Lake Tanglewood area after being struck by lightning. Thunderstorms across the south-central Texas panhandle produced lightning which injured a teenage boy during the early evening hours.

TEXAS, Northeast

NONE REPORTED.

TEXAS, South

NONE REPORTED.

TEXAS, South Central

NONE REPORTED.

TEXAS, South Panhandle

NONE REPORTED.

TEXAS, Southeast

NONE REPORTED.

TEXAS, West

TXZ057

Van Horn/Guadalupe Mountains Area

07	0850MST	1115MST			0	0			High Wind (G54)
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Upper level low pressure moving through Colorado strengthened the pressure gradient that amounted to a marginal high wind event in the Guadalupe Mountains. Sustained winds reached 40 mph through Guadalupe Pass and a peak gust of 62 mph was recorded by the Guadalupe Bowl RAWS site.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, West

TXZ057

Van Horn/Guadalupe Mountains Area

16	2345MST				0	0			High Wind (G45)
17	1100MST								

Strong winds behind a cold front blew cold air through Guadalupe pass for many hours overnight. Although the peak wind was only 52 mph, the sustain winds were 40+ mph for over 11 hours. In addition to the winds, low clouds and fog shrouded the mountains as well.

TXZ057

Van Horn/Guadalupe Mountains Area

29	1430MST				0	0			High Wind (G47)
	1630MST								

A minimal high wind event through Guadalupe Pass in which sustained winds of 40 mph blew for about two hours. The peak gust was 54 mph.

TEXAS, Western North

Wilbarger County

3 E Lockett	08	1700CST			0	0	3K		Thunderstorm Wind (G69)
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Wilbarger County

3 E Lockett	08	1710CST			0	0			Hail (0.75)
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On the afternoon of the 8th, an isolated severe thunderstorm produced severe winds 3 miles east of Lockett in Wilbarger County, which tore the roof off a barn and blew down one of the barn walls. In addition, a cotton trailer was blown over, and other minor tree and roof damage was reported. Hail also accumulated on the ground to a depth of 6 to 8 inches.

UTAH, East

NONE REPORTED.

UTAH, West and Central

UTZ005-019 Great Salt Lake Desert And Mountains/Wendover/Snowville - Utah'S Dixie And Zion National Park

06	1400MST				0	0	0	0	High Wind
	1600MST								

Strong winds ahead of a cold front brought 66 mph (57 kts) wind gusts to St. George, and 51 mph (44 kts) gusts to Vernon Hill.

UTZ019

Utah'S Dixie And Zion National Park

16	0800MST				0	0	0	0	High Wind
	2100MST								

Strong northerly winds behind a cold front brought 58 mph (50 kts) gusts to Hurricane and 50 mph (44 kts) gusts to Toquerville.

UTZ007

Wasatch Mountains I80 North

28	2100MST				0	0	0	0	Heavy Snow
29	0900MST								

Finally some decent snow in the mountains, as a storm dropped 6 inches on Snowbird with 8-10 inches on top of the tram. Sundance reported 12 inches on top of the mountain.

VERMONT, North and Central

VTZ002

Franklin

04	0600EST				0	0	5K		Light Snow
	1300EST								

A weak area of low pressure moved along a frontal boundary from Pennsylvania across southern New England during Monday, October 4th. Rain changed to wet snow. Accumulations across the higher terrain were 1 to 2 inches. A few automobile accidents were reported as well as scattered power outages.

VTZ003

Orleans

04	0600EST				0	0	5K		Light Snow
	1300EST								

A weak area of low pressure moved along a frontal boundary from Pennsylvania across southern New England during Monday, October 4th. Rain changed to wet snow. Accumulations were generally 1 to 3 inches. However...across the highest mountains, locally higher snowfall amounts were reported (Jay Peak received around 8 inches). A few automobile accidents were reported as well as scattered power outages.

VTZ006

Lamoille

04	0600EST				0	0	5K		Light Snow
	1300EST								

A weak area of low pressure moved along a frontal boundary from Pennsylvania across southern New England during Monday, October 4th. Rain changed to wet snow. Accumulations were generally 1 to 3 inches. However...across the highest mountains, locally

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VERMONT, North and Central

higher snowfall amounts were reported. A few automobile accidents were reported as well as scattered power outages.

VTZ004-007

Essex - Caledonia

04	0700EST 1300EST				0	0	10K		Light Snow
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A weak area of low pressure moved along a frontal boundary from Pennsylvania across southern New England during Monday, October 4th. Rain changed to wet snow. Accumulations in the higher terrain were generally 1 to 2 inches. A few automobile accidents were reported as well as scattered power outages.

VTZ008-010

Washington - Orange

04	0700EST 1300EST				0	0	2K		Light Snow
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A weak area of low pressure moved along a frontal boundary from Pennsylvania across southern New England during Monday, October 4th. Rain changed to wet snow. Accumulations were generally 1 to 3 inches in the mountains with scattered power outages. Snowfall reports of 3 inches were received from Randolph (Orange county) and Barre (Washington county).

VTZ003-006>009

Orleans - Lamoille - Caledonia - Washington - Addison

23	0900EST 2300EST				0	0	5K		Light Snow
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An area of low pressure intensified over eastern New England during Saturday, October 23rd. The higher passes of the northern Green Mountains received between 1 and 3 inches of snow...with locally higher amounts at the summits. A few automobile accidents were reported on roads through the higher mountain passes.

VERMONT, South

NONE REPORTED.

VIRGIN ISLANDS

VIZ010-020-030

St. Croix - St. John - St. Thomas

20	1800AST				0	0	20K		Hurricane
21	2300AST								

Hurricane Jose reached the northern Leeward Islands Wednesday night, October 20. As Jose continued to move to the northwest it weakened and by 1100 am Jose was downgraded to Tropical Storm. The center of Hurricane Jose passed just to the east and northeast of St. Thomas at 800 am Thursday morning. St. John reported sustained winds of 60 mph with gust to 68 mph at 100 am Thursday, October 21. St Thomas reported sustained winds of 44 mph with gusts to 52 mph shortly after noon on Thursday.

Numerous rain bands and tropical storms force winds affected most of the U.S. Virgin Islands during Wednesday night and Thursday. In St. Croix several areas were without electric power and in St. Thomas and St. John strong winds knocked down power lines, trees and bent street signs.

St. Croix County

St. Croix

25	0800AST 1200AST				0	0			Urban/Sml Stream Fld
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St. John County

St. John

25	0800AST 1200AST				0	0			Urban/Sml Stream Fld
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St. Thomas

County

St. Thomas

25	0800AST 1200AST				0	0			Urban/Sml Stream Fld
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A tropical wave produced heavy rains and consequently urban flooding over parts of St. Thomas, St. John and St. Croix.

VIRGINIA, East

VAZ091-094>100

York - Newport News - Norfolk - Suffolk - Chesapeake - Virginia Beach - Accomack - Northampton

17	1600EST				0	0	45K		Hurricane
18	0600EST								

Hurricane Irene was an intensifying Category 1 hurricane at the time of closest approach to the Wakefield county warning area during the overnight hours of Monday October 18th. Irene was the third tropical system of the 1999 hurricane season to affect the Wakefield county warning area, and brought another round of very heavy rain into southeast Virginia. The very heavy rainfall, locally up to 8 to 12 inches, resulted in widespread street flooding in the urbanized Hampton Roads area. The highest sustained wind speed recorded was 36 mph at the Oceana Naval Air Station (NTU). Other sustained wind speeds were 27 mph at Wallops Island (WAL), and 24 mph at the Norfolk International Airport (ORF). The highest gusts recorded were 48 mph at the Oceana Naval Air Station, 40 mph at the Norfolk International Airport, and 39 mph at Wallops Island. The tidal departure at Sewells Point was less than a foot above normal. The lowest sea level pressure recorded was 996.6 mb at the Oceana Naval Air Station (NTU).

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	
<u>VIRGINIA, East</u>									
Franklin (C)									
Franklin	17	1730EST 2330EST			0	0			Flash Flood
Isle Of Wight County									
Countywide	17	1730EST 2330EST			0	0			Flash Flood
Southampton County									
Countywide	17	1730EST 2330EST			0	0			Flash Flood
Suffolk (C)									
Countywide	17	1730EST 2330EST			0	0			Flash Flood
Very heavy rainfall, locally up to 5 to 9 inches, associated with Hurricane Irene, resulted in numerous flooded roads and roads closed due to high water.									
Chesapeake (C)									
Countywide	17 18	1815EST 0020EST			0	0			Flash Flood
Norfolk (C)									
Countywide	17 18	1815EST 0020EST			0	0			Flash Flood
Portsmouth (C)									
Countywide	17 18	1815EST 0020EST			0	0			Flash Flood
Virginia Beach (C)									
Countywide	17 18	1815EST 0020EST			0	0			Flash Flood
Very heavy rainfall, locally up to 7 to 12 inches, associated with Hurricane Irene, resulted in numerous flooded roads and roads closed due to high water.									
Hampton (C)									
Countywide	17 18	2000EST 0000EST			0	0			Flash Flood
Newport News (C)									
Countywide	17 18	2000EST 0000EST			0	0			Flash Flood
Poquoson County									
Countywide	17 18	2000EST 0000EST			0	0			Flash Flood
York County									
Countywide	17 18	2000EST 0000EST			0	0			Flash Flood
Very heavy rainfall, locally up to 4 to 7 inches, associated with Hurricane Irene, resulted in numerous flooded roads and roads closed due to high water.									

VIRGINIA, Extreme Southwest

NONE REPORTED.

VIRGINIA, North

VAZ021

Highland

01	0000EST	0	0	Drought
12	2359EST			

The drought that affected much of the region since the summer of 1998 finally came to an end in Highland County. The county was still in a mild drought at the beginning of the month, but over 2 inches of much needed rain fell between the 1st and the 12th, ending the water shortage. Mandatory water restrictions were finally lifted. By October 30th, state officials estimated Virginia farmers had drought losses of more than \$165 million, not including pasture or damage from livestock and poultry producers.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, Northwest

VAZ003>004 Dickenson - Buchanan

01	0000EST				0	0			Drought
31	2300EST								

The drought severity eased, as monthly rainfall totals were around 3 inches. Ground water shortages were still a concern.

VIRGINIA, Southwest

VAZ047 Buckingham

01	0000EST				0	0			Flood
	0100EST								

Heavy rain on the 28th and 29th of September caused moderate flooding on the James River at Bremono Bluff. The flooding began on the 30th and continued into the early morning of the 1st.

VAZ059 Charlotte

01	0000EST				0	0			Flood
	1230EST								

Heavy rain on the 28th and 29th of September caused minor flooding on the Roanoke River at Randolph. Minor flooding started on the 30th and continued into the 1st.

VAZ058 Halifax

01	0000EST				0	0			Flood
	0100EST								

Heavy rain on the 28th and 29th of September caused flooding on the Dan River at South Boston. Minor flooding started on the 30th and continued into the 2nd.

Bland County

9 ENE Bland	04	1650EST			0	0			Hail (0.88)
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Bland County

9 ENE Bland	04	1650EST			0	0	0		Thunderstorm Wind
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Pulaski County

1 E Dublin	04	1745EST			0	0			Hail (0.75)
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Montgomery County

Christiansburg	04	1805EST			0	0			Hail (0.75)
		1810EST							

Thunderstorms on the evening of the 4th produced damaging winds and hail up to nickel size.

Thunderstorm winds uprooted many trees 9 miles east-northeast of Bland.

WASHINGTON, Northeast

WAZ031-037>038-042 Northeast Blue Mountains - Northeast Mountains - Okanogan Highlands - East Slopes Northern Cascades

26	1700PST				0	0			Heavy Snow
28	2000PST								

Snow amounts of 4 inches were reported the mountains above 5000 feet of northeast and southeast Washington along with the east slopes of the north Cascades.

WASHINGTON, Northwest

WAZ002-004>009-011 Western Whatcom - Central Casade Foothills - Northwest Interior - Everett And Vicinity - Seattle Metropolitan Area - Tacoma Area - Admiralty Inlet Area - Southwest Interior

27	0400PST				1	0	100K		High Wind (G48)
	1300PST								

40 mph winds with gust to 55 mph first blew through the Cascade foothills. After those easterly winds died down, southerly winds of the same magnitude blew through central Puget Sound. The easterly winds toppled a tree which killed a hiker and the southerly winds knocked out power to 50,000 homes. The strong southerly winds also knocked a few trees onto houses and closed a few roads for several hours. F62UT

WASHINGTON, Southeast

WAZ027 Yakima Valley

27	1251PST				0	0			Heavy Snow
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Locally heavy snow fell in the eastern foothills of the Washington Cascades early this morning. A spotter in White Swan, a small town 15 miles southwest of Yakima, reported that 9 inches of snow fell at an elevation of around 2000 ft. 10,000 customers lost power in the towns of Wiley and Selah. The outage lasted around one hour and was due to the wetting of a power insulation line. This storm was also the first of the year that affected the passes across the Washington Cascades. Satus pass, at an elevation of 3100

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WASHINGTON, Southeast

ft, received 3 inches of snow.

WASHINGTON, Southwest

NONE REPORTED.

WEST VIRGINIA, East

WVZ048>052-054>055 **Grant - Mineral - Hampshire - Morgan - Berkeley - Pendleton - Hardy**

01	0000EST								
31	2359EST			0	0				Drought

The drought that affected much of the region since the summer of 1998 finally came to an end across the Eastern Panhandle. At the beginning of the month, the area was still in a moderate drought. By mid-month, over 2 inches of rain fell in many locations, bringing an end to the water shortage.

WEST VIRGINIA, North

Brooke County

Follansbee	13	1818EST					3K		Thunderstorm Wind
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Thunderstorm winds downed several trees.

WEST VIRGINIA, Southeast

NONE REPORTED.

WEST VIRGINIA, West

WVZ005>011-013>020-024>040-046>047 **Wayne - Cabell - Mason - Jackson - Wood - Pleasants - Tyler - Lincoln - Putnam - Kanawha - Roane - Wirt - Calhoun - Ritchie - Doddridge - Mingo - Logan - Boone - Clay - Braxton - Gilmer - Lewis - Harrison - Taylor - Mcdowell - Wyoming - Raleigh - Fayette - Nicholas - Webster - Upshur - Barbour - Pocahontas - Randolph**

01	0000EST								
31	2300EST			0	0				Drought

The drought severity eased. Monthly rainfall was an inch above normal in many counties. Rain totals of 3 to 4 inches were common and evenly distributed through the month. This kept the autumn brush fires at a minimum. Surface flow in streams increased. However, ground water remained low. Approximately, 18 percent of the wells in the state were dry or in danger of going dry. Water continued to be hauled to livestock. The state is still having water tankers stationed in various communities to supplement residential water consumption.

Wayne County

Hts Tri State Arpt	13	1806EST							Thunderstorm Wind (G52)
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A wind gust of 60 mph was recorded.

Wayne County

Wayne	13	1820EST					20K		Thunderstorm Wind
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Cabell County

Culloden	13	1830EST					5K		Thunderstorm Wind
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Trees fell across Route 60.

Lincoln County

Hamlin to Yawkey	13	1835EST					15K		Thunderstorm Wind
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Putnam County

Hurricane	13	1835EST 1838EST					25K		Thunderstorm Wind
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The total damage in Hurricane affected 17 homes and 2 mobile homes. Vehicles, storage buildings, a gazebo, a couple decks, numerous fences and swing sets were damaged by the wind or fallen trees.

Putnam County

1 W Hurricane to .7 W Hurricane	13	1836EST	0.3	200	0	0	80K		Tornado (F1)
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The brief tornado touched down on Virginia Ave in the western limits of Hurricane. One house and its detached garage sustained significant damage. A wall to the garage collapsed, but the 2 men inside escaped without being injured. The location was on the left side of a longer damage path caused by straight line winds.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WEST VIRGINIA, West

Kanawha County

St Albans 13 1855EST 0 0 10K Thunderstorm Wind

Kanawha County

Nitro 13 1900EST 0 0 15K Thunderstorm Wind
Siding was ripped off a house, a carport was destroyed, and windows were broken.

Boone County

Madison 13 1905EST 0 0 5K Thunderstorm Wind

Kanawha County

Dunbar 13 1905EST 0 0 2K Thunderstorm Wind
An awning was torn off a house.

Kanawha County

Charleston 13 1910EST 0 0 85K Thunderstorm Wind
Straight line winds of 60 to 70 mph caused numerous trees to be snapped off or uprooted, mainly in the South Hills and Kanawha City region. On Washington Ave one fallen tree poked holes into a residential roof and knocked off the top of the chimney. Nearby, the roof of a Little League dugout and nearby equipment shed were ripped off, damaging adjacent fencing. About 25 truck loads of fallen trees were hauled away by the city.

Boone County

Van 13 1920EST 0 0 5K Thunderstorm Wind

Clay County

Duck 13 1930EST 0 0 2K Thunderstorm Wind
The sheriff department reported a few roads blocked by fallen trees.

WVZ035>036-038-046>047 Raleigh - Fayette - Webster - Pocahontas - Randolph

29 1300EST 0 0 Record Warmth
1600EST

Temperatures peaked in the 70s. Beckley reached 73 degrees, while Elkins registered 76 days, both equalled their records for the date.

WISCONSIN, Extreme Southwest

NONE REPORTED.

WISCONSIN, Northeast

WIZ039

Brown

04 0500CST 0 0 Cold

The low temperature at Austin Straubel International Airport in Green Bay was 25 degrees. This tied the record low for October 4th that was set in 1989.

WIZ005-010>011-022

Vilas - Oneida - Forest - Door

22 0030CST 0 0 Strong Wind
23 2200CST

An intense area of low pressure that passed north of Wisconsin brought strong winds to north-central Wisconsin on the morning of October 22nd and to part of northeast Wisconsin on October 22nd and 23rd. Trees were downed by the strong winds in Vilas county, Forest county and Oneida county on the morning of the 22nd. The downed trees landed on power lines causing as many as 4,000 customers to lose electrical service. Around 3:00 am on October 22nd a television station in Rhineland (Oneida county) recorded a wind gust of 43 mph and one of their observers 3 miles east of Rhineland (Oneida county) reported a gust of 57 mph. Automated wind equipment near Gills Rock (Door county) recorded gusts as high as 56 mph between 11:00 am and noon.

WISCONSIN, Northwest

NONE REPORTED.

WISCONSIN, Southeast

NONE REPORTED.

WISCONSIN, Southwest

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

October 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, West

NONE REPORTED.

WYOMING, Central and West

WYZ011>012-014 Wind River Mtns East - Lander Foothills - Green Mountains

15	2100MST				0	0			Heavy Snow
16	0900MST								

Upslope snow event brought 14 inches of snow to Sinks Canyon State Park, 11 inches of snow to Lander and 7 inches to Jeffrey City.

WYOMING, Extreme Southwest

NONE REPORTED.

WYOMING, North Central

NONE REPORTED.

WYOMING, Northeast

NONE REPORTED.

WYOMING, Southeast

NONE REPORTED.

Storm Data and Unusual Weather Phenomena

April 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
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ADDITIONS/CORRECTIONS

MISSOURI, East

Audrain County
ESNR Mexico

08	1730CST	10	100	0	0	Tornado (F1)
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The supercell that spawned the Midway and Hinton tornadoes produced a third tornado in Audrain County. The tornado first caused damage just west of Mexico where 3 billboards and several trees were downed. Just to the northeast of Mexico, the tornado caused damage at an industrial complex. One factory lost part of its roof and several smaller sheet metal buildings were destroyed. Near Highways J and KK a barn was extensively damaged and 2 grain bins destroyed. The last observed damage was about 5 miles northeast of Mexico. One barn was destroyed, 2 equipment buildings destroyed, and 2 homes suffered minor roof damage.

Storm Data and Unusual Weather Phenomena

May 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

ADDITIONS/CORRECTIONS

KANSAS, Southeast

Sumner County

Perth 03 1823CST 0 0 **Hail (1.00)**

Harper County

Waldron 03 1825CST 0 0 **Hail (0.88)**

Harper County

Waldron 03 1834CST 0 0 **Hail (1.75)**

Sumner County

**3 SW Mayfield to
10 N Mayfield** 03 1835CST 12 440 0 0 250K **Tornado (F1)**
1913CST

Minor roof damage inflicted to a business in Mayfield. Just north of Mayfield, a metal outbuilding was partially unroofed with minor roof damage inflicted to the adjacent house. The tornado then hit a farmstead where windows were broken on the south and west sides of the house, a satellite dish tilted over, two metal grain bins removed and a metal barn damaged when one of the grain bins was thrown into it. Near termination, major damage was inflicted to two mobile homes, one of which was thrown about 50 feet and destroyed on impact with a row of trees.

Sedgwick County

Haysville 03 1848CST 0 0 **Hail (0.75)**

Sedgwick County

Wichita 03 1853CST 0 0 **Hail (1.00)**

Sedgwick County

Wichita 03 1856CST 0 0 **Hail (1.75)**

Sedgwick County

Wichita 03 1902CST 0 0 **Hail (1.00)**
1904CST

Sumner County

**4 N Wellington to
6 W Mulvane** 03 1913CST 10 880 0 4 750K **Tornado (F1)**
1930CST

Initial touchdown occurred 4 miles north of Wellington in Central Sumner County where several power poles were knocked down. Moving north-northeast near 30 kts, the tornado inflicted damage to about 15 structures including complete destruction of two mobile homes, a pole barn, two wood sheds and one metal shed. Also damaged were a ranch style home and a metal shed, both of which lost most of their roofing. This tornado was responsible for all 4 injuries in Sumner County. Of the injuries, 3 occurred (1 serious) in the two destroyed mobile homes. While in Sumner County, this tornado possessed a path 10 miles long and 1/4 to 1/2 mile wide. It would exit Sumner County at 1930, continuing a north-northeast track into Sedgwick County.

Sedgwick County

**Peck to
Wichita** 03 1930CST 14 880 6 150 140M **Tornado (F4)**
1955CST

The same tornado that initially touched down 4 miles north of Wellington in Central Sumner County, SKYWARN reports indicate the tornado crossed the Sumner/Sedgwick County line at 1930, 1 mile west of Peck. Moving northeast at 30 kts, the tornado hit Haysville at 1935, destroying a subdivision just southwest of the South Seneca-South 87th Street intersection where the first 2 fatalities occurred in a mobile home park when a woman and her grandson were killed while running for shelter. (A 6th fatality resulted when an elderly man died from his injuries at a Wichita hospital on May 23rd.) The tornado then moved north along South Seneca Avenue, entering the Haysville Central Business District at 1938. The 3rd fatality occurred at this point when an elderly man was killed in a mobile home at South 75th Street. At the South Seneca/South 71st Street intersection, most of the businesses were heavily damaged or destroyed. Damage summary for Haysville (damaged or destroyed): 150 homes, 27 businesses, 3 churches, 1 library, 4 historic buildings and 1 lodge.

The tornado entered South Wichita at 1943 when it crossed South 55th Street. The tornado then veered slightly toward the northwest. At South 47th Street it reassumed a northeast track. Crossing MacArthur Avenue, the tornado leveled the Lakeshore and Pacesetter mobile home parks located just northeast of the South Seneca/MacArthur intersection where the 4th and 5th fatalities occurred, one at each mobile home park. At 1945, the tornado crossed the East Harry Street interchange on I-135 and continued to move northeast, lifting in the College Hill District in Northeast Wichita. Along this entire track, the tornado left a path of destruction 14 miles long and 1/4 to 1/2 mile wide. Damage summary for Sedgwick County: 8,480 buildings (all types) damaged or destroyed. Of these, 2,456 were at least 50% destroyed and 1,109 totally destroyed. M27MH, F43OU, M1OU, M83MH, M68MH, M78MH

Butler County

3 SW Augusta 03 2015CST 0 55 0 0 **Tornado (F0)**

Brief touchdown in open country.

Sumner County

Mulvane 04 0004CST 0 0 **Hail (0.88)**

Butler County

Andover 04 0715CST 0 0 **Flash Flood**
1050CST

Flash flooding from torrential rains resulted in the closure of 21st Street and Central Avenue with Andover Road limited to one-lane

Storm Data and Unusual Weather Phenomena

May 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	

ADDITIONS/CORRECTIONS

KANSAS, Southeast

traffic.

Chautauqua County Cedar Vale	04	0715CST			0	0			Hail (0.88)
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Chautauqua County Cedar Vale	04	0733CST 1000CST			0	0			Flash Flood
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Torrential rains of 2-3 inches flooded Highway 166 at Cedar Vale.

Butler County Towanda to 5 N Towanda	04	0800CST 1050CST			0	0	500K		Flash Flood
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Major flash flooding occurred in Northwest Butler County along Four Mile Creek, a tributary of the Whitewater River. Several houses were reported in high water. In Towanda, the torrential rains caused widespread street flooding.

Russell County Russell	04	1127CST			0	0			Hail (0.75)
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Russell County Russell	04	1128CST			0	0			Hail (1.00)
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Russell County Bunker Hill	04	1219CST			0	0			Hail (1.75)
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Reno County Hutchinson	04	1241CST			0	0			Hail (0.75)
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Reno County Buhler	04	1254CST			0	0			Hail (1.75)
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Reno County 2 W Buhler to 3 N Buhler	04	1302CST 1308CST	3	150	0	0	1M		Tornado (F1)
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At Buhler, a subdivision consisting of 37 homes was hit. Of the 37 homes damaged, 3 were destroyed, 4 sustained major damage and 30 minor damage. This tornado would continue a northeast track into Southwest McPherson County where it skipped along Highway 61.

Mcpherson County 13 SW Mc Pherson to 3 SW Mc Pherson	04	1308CST 1318CST	5	100	0	0	50K		Tornado (F1)
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Initial damage occurred 3.5 miles SW of Inman where an old barn collapsed and trees were uprooted. The greatest damage occurred 3-4 miles east of Inman where one house sustained minor roof damage, a circle irrigation system was destroyed, a tin cattleshed was destroyed, and an irrigation pipe was wrapped around trees. As the tornado continued a northeast track along and just east Highway 61, it inflicted more tree damage as well as damaging part of the wheat crop as it passed 2 miles southeast of Groveland before lifting 3 miles southwest of McPherson. Though possessing an overall track of 10 miles from point of entry into McPherson County to dissipation, the tornado skipped, never maintaining ground contact for more than 2 miles at a time with the segments totalling about 5 miles.

Saline County 15 SW Salina to 10 W Salina	04	1308CST 1330CST	5	55	0	0			Tornado (F0)
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Remained over open country.

Ellsworth County 5 SE Carneiro to 4 SE Carneiro	04	1315CST	1	55	0	0			Tornado (F0)
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Remained over open country.

Mcpherson County 5 S Mc Pherson to 3 S Mc Pherson	04	1323CST	2	55	0	0			Tornado (F0)
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Remained over open country.

Mcpherson County Mc Pherson	04	1343CST			0	0			Hail (1.25)
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Lincoln County 5 W Ash Grove to 4 NW Ash Grove	04	1345CST 1354CST	5	55	0	0			Tornado (F0)
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Remaining over open country, the tornado crossed the Lincoln/Mitchell County line, 4 miles northwest of Ash Grove where it lifted just west of Hunter in extreme Southwest Mitchell County.

Marion County 3 NW Marion to 2 NE Lincolnville	04	1535CST 1555CST	15	220	0	0	50K		Tornado (F1)
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Initial touchdown occurred over eastern Marion Reservoir at approximately 1535. Moving northeast at 30 kts, the tornado passed near

Storm Data and Unusual Weather Phenomena

May 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

ADDITIONS/CORRECTIONS

KANSAS, Southeast

upon one home just southeast of Lost Springs where the garage was destroyed and part of roof was lost.

Marion County 2 NE Lincolnville	04	1547CST			0	0			Hail (1.75)
Labette County Edna	04	2034CST			0	0			Hail (1.00)
Labette County 3 SW Dennis	04	2038CST 2045CST			0	0	25K		Thunderstorm Wind (G56)

Roof was torn off a metal barn.

Neosho County Erie	04	2038CST			0	0			Hail (0.75)
KSZ047-068-083-100 Barton - Harvey - Sedgwick - Labette	04 09	2040CST 2355CST			0	0	15K		High Wind (G61)

Outflow from dissipating thunderstorms over western Kansas induced sustained winds of 52-61kts across most of Barton County downing power lines in Great Bend.

Labette County Oswego	04	2046CST			0	0			Hail (0.75)
Labette County 4 E Altamont	04	2050CST			0	0			Hail (1.00)
Sedgwick County Anness	10	0002CST			0	0			Hail (1.00)
Sedgwick County Clearwater	10	0037CST			0	0			Hail (1.50)
Sedgwick County Peck	10	0055CST			0	0			Hail (0.75)
Sedgwick County Wichita	10	0255CST			0	0			Hail (0.75)

Reported in South Wichita.

Ellsworth County Black Wolf	10	1736CST			0	0			Hail (0.75)
Ellsworth County 3 S Wilson	10	1811CST			0	0			Hail (1.00)
Lincoln County 2 NW Barnard	10	1815CST			0	0			Hail (1.00)
Barton County 7 S Great Bend	10	1816CST			0	0			Hail (1.00)
Barton County 3 SW Claflin to 2 NE Claflin	10	1820CST 1835CST	5	110	0	0	100K		Tornado (F1)

In Claflin, one farmstead sustained damage where top half of barn was destroyed, grainery destroyed, grain bin disappeared, and chicken house lost nearly 2/3 of it's roof.

Barton County 11 SE Great Bend	10	1830CST			0	0			Hail (1.00)
Ellsworth County 1 SW Holyrood	10	1845CST			0	0			Hail (0.75)
Rice County 2 E Bushton to 3 NE Bushton	10	1916CST 1918CST	1	55	0	0			Tornado (F0)

Remained over open country.

Rice County 3 NW Lyons	10	2030CST 2033CST			0	0			Thunderstorm Wind (G52)
Kingman County Willowdale	10	2251CST			0	0			Hail (0.75)
Kingman County 2 N Belmont	10	2335CST			0	0			Hail (0.75)
Woodson County Yates Center	11	1759CST			0	0			Hail (0.75)
Montgomery County 3 NE Liberty	11	1815CST			0	0			Hail (0.75)

Storm Data and Unusual Weather Phenomena

May 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ADDITIONS/CORRECTIONS

KANSAS, Southeast

Labette County

Dennis 11 1859CST 0 0 **Hail (0.75)**

Neosho County

5 SE Erie 11 1905CST 0 0 **Hail (0.75)**

Labette County

Dennis 11 1907CST 0 0 **Thunderstorm Wind (G52)**

Neosho County

Thayer 11 2000CST 0 0 **Hail (0.75)**

Neosho County

Galesburg 11 2010CST 0 0 **Hail (1.00)**

Neosho County

4 W Erie 11 2020CST 0 0 **Hail (1.00)**

Montgomery County

1 S Independence 11 2359CST 0 0 **Flash Flood**

12 0100CST
Onion Creek flooded, closing S. 10th St.

Reno County

**2 W Buhler to
3 N Buhler** 04 1302CST 3 150 0 0 1M **Tornado (F1)**
1308CST

At Buhler, a subdivision consisting of 37 homes was hit. Of these 37 homes, 3 were destroyed, 4 sustained major damage and 30 minor damage. This tornado would continue a northeast track into southwest McPherson County where it skipped along Highway 61.

Mcpherson County

**13 SW Mc Pherson to
3 SW Mc Pherson** 04 1308CST 5 100 0 0 50K **Tornado (F1)**
1318CST

Initial damage occurred 3.5 miles SW of Inman where an old barn collapsed and trees were uprooted. The greatest damage occurred 3-4 miles east of Inman where one house sustained minor roof damage, a circle irrigation system was destroyed, a tin cattleshed was destroyed, and an irrigation pipe was wrapped around trees. As the tornado continued a northeast track along and just east of Highway 61, it inflicted more tree damage as well as damaging part of the wheat crop as it passed 2 miles southeast of Groveland before lifting 3 miles southwest of McPherson. Though possessing an overall track of 10 miles from point of entry into McPherson County to dissipation, the tornado skipped, never maintaining ground contact for than 2 miles at a time with the segments totalling about 5 miles.

Storm Data and Unusual Weather Phenomena

June 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

ADDITIONS/CORRECTIONS

KANSAS, Southwest

KSZ084

Morton

10 2100CST

0 0

High Wind (G52)

Storm Data and Unusual Weather Phenomena

July 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ADDITIONS/CORRECTIONS

COLORADO, Central and Northeast

Denver County (Den)Denver Intl Arp	28	1654MST			0	0			Thunderstorm Wind (G56) ^M
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MICHIGAN, West

Allegan County Countywide	21	0700EST 0730EST			0	0	10K		Flash Flood
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Weather spotters reported minor roadway flooding in Plainwell and in the city of Allegan.

Heavy rain moved into Allegan County during the early morning hours. 2.37 inches of rain fell in less than 2 hours in Plainwell, and 2.75 inches of rain fell in the city of Allegan in one hour. This caused minor roadway flooding in Plainwell, and in the city of Allegan.

WISCONSIN, Northwest

Price County 5 SW Phillips	30	1845CST			0	2	500K		Thunderstorm Wind (G76)
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The strong winds blew down trees and power lines and flipped a boat and trailer, tossing them 71 feet. A tree fell on a house, puncturing holes in the roof. The strong winds also blew a 33-inch diameter pine tree down across a minivan, causing minor injuries to 2 people.

Storm Data and Unusual Weather Phenomena

August 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ADDITIONS/CORRECTIONS

NEW YORK, West

Erie County

Buffalo	24	1645EST 1845EST			0	0	75K		Flash Flood
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Niagara County North Tonawanda

	24	1715EST			0	0	9K		Thunderstorm Wind
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Erie County Tonawanda

	24	1720EST			0	0	12K		Thunderstorm Wind
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Niagara County Lewiston

	24	1737EST			0	0	55K		Thunderstorm Wind
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Severe thunderstorms crossed the area during the evening hours producing damaging winds and torrential rains. The thunderstorm winds downed trees and power lines in North Tonawanda and Lewiston. Power outages were scattered throughout Niagara and northern Erie Counties. The thunderstorms winds overturned a travel trailer in the KOA Campground on Grand Island. The torrential rains produced flash flooding in areas of Tonawanda and north Buffalo.

Erie County Alden

	27	1610EST 1800EST			0	0	60K		Flash Flood
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Thunderstorms produced torrential rains that resulted in flash flooding. In addition to closed roads, several basements were flooded.

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ADDITIONS/CORRECTIONS

CONNECTICUT, Southern

Fairfield County

Countywide	16	1430EST							
	17	0730EST			0	0	1.3M		Flood

New Haven County

Countywide	16	1500EST							
	18	0300EST			1	0			Flood
		M34BO							

Middlesex County

Countywide	16	1700EST							
					0	0			Flood

New London County

Countywide	16	1700EST							
					0	0			Heavy Rain

Torrential record rainfall, which caused serious widespread urban, small stream, and river flooding, preceded the remnants of Hurricane Floyd, which passed over Western Suffolk County of Long Island around 8 pm and across Central Connecticut from 9 pm to 11 pm on the 16th.

Death: A 34-year old man drowned around 6 pm Friday, September 17th while boating in the Quinnipiac River in Meriden. The river was cresting and the flow rate was at its' peak when he drowned.

Property Damage: Fairfield, Litchfield, and Hartford Counties were declared disaster areas. The initial cost estimates for damage to only the public sector included \$1.3 million dollars for Fairfield County, \$204,254 for Hartford County, and \$53,000 for Litchfield County. These estimates do not account for damage in the private sector. This information was provided by the Connecticut Office of Emergency Management.

The greatest property damage occurred in Danbury, along the Still River and its' tributaries. Over 300 homes, 2 car dealerships, an elderly apartment complex, a trailer park, several roads, and a bridge were damaged in Danbury. Rainfall return frequencies in the Danbury area ranged from the 400 to 500 year event.

Urban Flooding: Serious widespread flooding of low-lying and poor drainage areas resulted in the closure of many roads and basement flooding across Fairfield, New Haven, and Middlesex Counties.

Stream and River Flooding:

In Fairfield County, as stated above, major flooding occurred along the Still River and its' tributaries from Brookfield to Danbury.

In New Haven County, the Quinnipiac River at Wallingford was above its' flood stage of 7 ft. from 7:20 pm on the 16th until 2 pm on the 18th. The crest stage of 9.43 ft. occurred at 5:03 pm on the 17th.

Rainfall Amounts: The axis of heaviest rain was oriented from southwest to northeast and extended from central NJ northeast across the Lower Hudson Valley of Southeast NY and Southwest CT. Maximum rainfall rates from 1 to 2 inches per hour lasted for at least 3 consecutive hours at Bethel and Danbury in Fairfield County. Here are selected rainfall amounts for:

Fairfield County: from 3.43 inches at Bridgeport Airport to 11.13 inches at Danbury Airport.

New Haven County: from 2.54 inches at Menungatuck to 6.18 inches at Ansonia. At New Haven Airport, 4.92 inches was measured.

Middlesex County: At Cockaponset, 4.47 inches was measured.

New London County: from 2.32 inches at Waterford to 5.44 inches at Jewett City.

Winds: Strong and gusty winds combined with torrential rain downed many trees, tree limbs, and power lines across the area. Significant power outages resulted. Most winds gusts were from 50 to 60 mph from around 5 pm on the 16th to around 3 am on the 17th.

ILLINOIS, South

ILZ075>078-080>094

Jefferson - Wayne - Edwards - Wabash - Perry - Franklin - Hamilton - White - Jackson - Williamson - Saline - Gallatin - Union - Johnson - Pope - Hardin - Alexander - Pulaski - Massac

01	0001CST								
30	2359CST			0	0				Drought

The moderate to severe summer drought took a considerable toll on crops across southern Illinois. The worst drought conditions were along the Ohio River, where Paducah, KY, received only 1.5 inches of rain in the three-month period from July to September.

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

ADDITIONS/CORRECTIONS

ILLINOIS, South

Carbondale received much more generous rainfall, with a three-month total of 5.5 inches. The soybean crop suffered the greatest effects from the drought, with yields in most areas only near 20 percent of normal. Corn yields were much closer to normal due to plentiful rains in June and early July, when the corn crop matures most rapidly. Small ponds and reservoirs became very low. The city of Marion, which relies on a small lake for its drinking water supply, was forced to siphon water from its neighboring city of Herrin. Low water levels in Union and Jackson Counties forced some cattle farmers to haul water to their herds. The fire danger reached extreme levels at times. The Illinois Department of Natural Resources issued a wildfire alert for southern Illinois due to the combination of drying grasses, brisk winds, and low humidity. Outdoor burning was banned in seven counties, including Alexander, Pope, Johnson, Jackson, Union, Pulaski, and Hardin. Local burning bans were posted in other counties. Among the many wildland fires that occurred, one of the largest was near West Frankfort, where 80 acres were scorched. River levels on the Ohio River became unsafe for navigation in places. Fully loaded barges could not safely navigate the river, so tonnage was reduced by 10 to 20 percent.

INDIANA, Southwest

INZ081>082-085>088

Gibson - Pike - Posey - Vanderburgh - Warrick - Spencer

01	0001CST	0	0	Drought
30	2359CST			

The moderate summer drought took a considerable toll on crops across Southwest Indiana. Rainfall at Evansville for the three-month period from July through September was about 3 inches. This compares to a 3-month average of around 10 inches. Evansville received 0.39 inches in September, which was 3 inches below normal. The soybean crop suffered the greatest effects from the drought, with average yields estimated only about 20 percent of normal. Corn yields were much closer to normal, mainly due to heavy rains in June and early July, when the corn crop matures. The fire danger reached extreme levels at times. The governor of Indiana declared a total burning ban across all of Southwest Indiana. A wildland fire in mid-September scorched several hundred acres near Chandler, which is in Warrick County. A field fire early in the month occurred near Evansville at the junction of Interstate 164 and U.S. Highway 41. Although no evacuations were required, the westbound lanes of Interstate 164 were closed briefly due to smoke. A wildfire on September 27 burned about 150 acres just west of Owensville in Gibson County. Fire departments from throughout Gibson County and parts of Posey County worked to extinguish this fire.

**Spencer County
Santa Claus**

08	1635CST	0	0	2K	Thunderstorm Wind (G52)
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Thunderstorm wind gusts estimated near 60 MPH downed numerous small branches.

KENTUCKY, Southwest

KYZ001>022

Fulton - Hickman - Carlisle - Ballard - Mccracken - Graves - Livingston - Marshall - Calloway - Crittenden - Lyon - Trigg - Caldwell - Union - Webster - Hopkins - Christian - Henderson - Daviess - Mclean - Muhlenberg - Todd

01	0001CST	0	0	154M	Drought
30	2359CST				

The severe summer drought took a major toll on crops and plants across West Kentucky. Rainfall at Paducah for the three-month period from July through September was about an inch and a half. This compares to a 3-month average of around 10 inches. Paducah received 0.66 inches in September, which was 3 inches below normal. The soybean crop sustained the greatest monetary losses, estimated near 70 million dollars. This was followed by tobacco losses near 50 million, and corn near 35 million. Total crop losses in western Kentucky were near 155 million dollars, which prompted an agricultural disaster declaration by the state and federal governments. The root systems of many shrubs and young trees were damaged by the drought. Some shrubs and shallow-rooted trees, such as dogwood and redbud trees, died during the summer. The unirrigated pumpkin crop was nearly a total loss. The fire danger reached extreme levels at times. A few of the largest fires reached 500 to 1000 acres in size. The largest fire occurred east of Central City in Muhlenberg County late in the month. This fire grew to almost 1000 acres, prompting the closure of the Western Kentucky Parkway for several hours. Another large fire, estimated around 500 acres, occurred in Hickman County early in the month. This fire, which may have been sparked by a passing train, burned quite a few corn and soybean fields. Finally, a 100-acre cornfield fire near Henderson closed the Pennyrile Parkway for about an hour and forced the brief evacuation of a nursing home. Burning bans were imposed in virtually all western Kentucky counties, including a campfire ban in the Land Between The Lakes National Recreation Area. The Kentucky Division of Water declared a Water Shortage Warning for the Pennyrile area, which includes the Owensboro and Hopkinsville areas. However, no mandatory water conservation measures were imposed. A secondary effect of the drought was premature leaf-drop, which reduced the brilliance of the fall colors. River levels on the Ohio River became unsafe for navigation in places. Fully loaded barges could not safely navigate the river, so tonnage was reduced by 10 to 20 percent.

MAINE, South

MEZ007>009-012>014-018>028

Northern Oxford - Northern Franklin - Central Somerset - Southern Oxford - Southern Franklin - Southern Somerset - Interior York - Interior Cumberland - Androscoggin - Kennebec - Interior Waldo - Coastal York - Coastal Cumberland - Sagadahoc - Lincoln - Knox - Coastal Waldo

30	1030EST	0	0	Strong Winds
	1430EST			

Strong, gusty, south winds developed across western and southern Maine on the east side of an intensifying low pressure system as it moved northeast from the Great Lakes into Canada. The wind downed trees and limbs onto power lines causing scattered power outages. Approximately 8000 customers were affected by the outages. Peak wind gusts were 40 mph (measured) at Augusta and

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ADDITIONS/CORRECTIONS

MAINE, South

Brunswick, and 39 mph (measured) at Portland.

MISSOURI, Southeast

MOZ076-086>087-100-107>112-114 Perry - Bollinger - Cape Girardeau - Wayne - Carter - Ripley - Butler - Stoddard - Scott - Mississippi - New Madrid

01	0001CST			0	0			Drought
30	2359CST							

The severe summer drought took a major toll on crops across Southeast Missouri. Rainfall at Cape Girardeau for the three-month period from July through September was just under two inches. This compares to a 3-month average of around 10 inches. Cape Girardeau received 0.98 inches in September, which is about 3 inches below normal. The soybean crop suffered the greatest effects from the drought, with yields estimated less than 50 percent of normal. The root systems of many shrubs and young trees were damaged by the drought. Some shrubs and shallow-rooted trees, such as dogwood and redbud trees, died during the summer. The effects of the drought were greatest closest to the Bootheel, from New Madrid to Cape Girardeau. Rainfall was higher to the north and west, especially from Perryville to the Poplar Bluff area. High fire danger prompted Cape Girardeau County to ban open burning.

NEW JERSEY, Northeast

Essex County Countywide	16	1000EST 1930EST		0	0	7.3M		Flood
Hudson County Countywide	16	1000EST 1930EST		0	0	400K		Flood
Union County Countywide	16	1000EST 1145EST		0	0	4.2M		Flood
Bergen County Countywide	16	1025EST 17 0430EST		2	0	17.5M		Flood
		M53VE, M27VE						
Passaic County Countywide	16	1025EST 1945EST		1	0	6M		Flood
		M82PH						

Torrential record rainfall, which caused serious widespread urban, small stream, and river flooding, preceded the remnants of Hurricane Floyd, which passed over Western Suffolk County of Long Island from 7 pm to 9 pm on September 16th.

Deaths: Flooding caused 3 deaths: 2 in Bergen County and 1 in Passaic County. In Bergen County, a 53 year old man and a 27 year old man drowned in their cars. In Passaic County, an 82 year old man drowned in his house.

Property Damage: State-wide, the initial cost estimates for damage to only the public sector was \$67 million dollars. For Passaic, Bergen, Essex, Hudson, and Union Counties, the initial cost estimates were \$35.5 million dollars. These estimates do not account for damage in the private sector. This information was provided by the New Jersey State Police Office of Emergency Management.

Urban Flooding: Serious widespread flooding of low-lying and poor drainage areas resulted in the closure of many roads and basement flooding across the entire region.

Stream and River Flooding: Many streams and rivers overflowed their banks and caused significant short- and long-term flooding for many communities.

In Passaic County:

The Molly Ann Brook at North Haledon was above its' flood stage of 6 ft. from 11:25 am on the 16th through 8:45 pm on the 16th. The crest stage of 9.4 ft. occurred at 5:15 pm on the 16th.

The Passaic River at Little Falls was above its' flood stage of 7 ft. from 4 pm on the 16th through 8 pm on the 20th. The crest stage of 9.99 ft. occurred at 10 pm on the 17th.

The Ramapo River at Pompton Lakes was above its' flood stage of 11.8 ft. from 10 pm on the 16th through 2 am on the 18th. The crest stage of 13.02 ft. occurred at 1 am on the 17th.

In Bergen County:

Storm Data and Unusual Weather Phenomena

Location	Date	Time	Path	Path	Number of		Estimated		September 1999	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops		

ADDITIONS/CORRECTIONS

NEW JERSEY, Northeast

The Hohokus Brook at Ho-Ho-Kus was above its' flood stage of 3 ft. from 12:15 pm on the 16th until 5:30 am on the 17th. The crest stage of 7.32 ft. occurred at 7:15 pm on the 16th. (This was more than a 100 year flood.)

The Hackensack River at the New Milford gage experienced a greater than 100 year flow event. The peak stage was 11.45 ft., which is the highest recorded in 78 years of record.

The Saddle River at Lodi experienced record flooding. The new peak stage was 13.94 feet. (This was more than a 100-year flood.)

The Pascack Brook at Westwood experienced record flooding. The new peak stage was 11.2 feet. (This was more than a 100-year flood.)

The Ramapo River at Mahwah rose to 12.52 ft. at 10 pm on the 16th (a 60-year flood).

In Union County: The Rahway River at Springfield was above its' flood stage of 5.5 ft. from 11 am on the 16th until 12:45 pm on the 17th. The crest stage of 10.67 ft. occurred around 10 pm on the 16th.

Rainfall Amounts: The axis of heaviest rain was oriented from southwest to northeast and extended from central NJ northeast across Bergen County and the Lower Hudson Valley of Southeast NY. Maximum rainfall rates of 1 to around 2 inches per hour lasted for up to 3 consecutive hours. Here are selected rainfall amounts for:

Passaic County: from 7.56 inches at both West Milford and Ringwood to 14.45 inches at Pompton Lakes.

Bergen County: from 7.36 inches at Montvale to 10.67 inches at Franklin Lakes. At Teterboro Airport, 8.53 inches of rain was measured.

Essex County: from 5.67 inches at Orange Reservoir to 14.29 inches at Maplewood. At Newark Airport, 6.79 inches was measured.

Hudson County: from 6.73 inches at Kearny to 7.67 inches at Harrison.

Union County: from 5.95 inches at Elizabeth to 11.90 inches at Union.

Winds: Strong and gusty winds combined with torrential rain downed many trees, tree limbs, and power lines across the area. Significant and widespread power outages resulted. The highest measured sustained wind speed and peak gust were 44 mph and 53 mph at Newark Airport from 7 pm to 8 pm on the 16th.

NJZ002-004

Western Passaic - Eastern Passaic

16	1430EST	0	0	High Wind (G50)
	1930EST			

Strong and gusty winds developed as the remnants of Hurricane Floyd approached Western Suffolk County on Long Island.

Wind gusts from 50 to 60 mph combined with torrential rain downed many trees, tree limbs, and power lines across the area. Significant and widespread power outages resulted.

NEW YORK, Coastal

**Bronx County
Countywide**

16	1108EST	0	0	Flood
	1900EST			

**Kings County
Countywide**

16	1108EST	0	0	Flood
	1900EST			

**New York County
Countywide**

16	1108EST	0	0	Flood
	1900EST			

**Queens County
Countywide**

16	1108EST	0	0	Flood
	1900EST			

**Richmond County
Countywide**

16	1108EST	0	0	Flood
	1900EST			

**Nassau County
Countywide**

16	1130EST	0	0	Flood
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Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

ADDITIONS/CORRECTIONS

NEW YORK, Coastal

Rockland County

Countywide	16	1200EST		1	0	4.4M	Flood
	18	0300EST					
		M53OU					

Westchester County

Countywide	16	1200EST		0	0	6.6M	Flood
	17	1400EST					

Suffolk County

Countywide	16	1245EST		0	0		Flood
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Orange County

Countywide	16	1415EST		0	0	1.7M	Flood
	17	1400EST					

Putnam County

Countywide	16	1415EST		0	0	1.9M	Flood
	17	1400EST					

Torrential record rainfall, which caused serious widespread urban, small stream, and river flooding, preceded the remnants of Hurricane Floyd, which passed over Western Suffolk County of Long Island from 7 pm to 9 pm on September 16th.

Death: In Rockland County, a 53-year old man died around midnight on the 17th when he was swept into the Pearl River while walking in Orangetown.

Property Damage: Orange, Putnam, Rockland, and Westchester Counties were declared disaster areas. For these 4 counties, the initial cost estimates were \$14.6 million dollars. These figures represents "eligible" costs for disaster payments, and were provided by the New York State Emergency Management Office. They represent a "fraction" of the costs that were actually incurred.

Urban Flooding: Serious widespread flooding of low-lying and poor drainage areas resulted in the closure of many roads and basement flooding across the entire region.

Stream and River Flooding:

In Rockland County, the Mahwah River at Suffern was above its' flood stage of 4 ft. from 1:30 pm on the 16th until 3 am on the 18th. The crest stage was about 9.7 feet.

In Westchester and Bronx Counties, the Saw Mill and Bronx Rivers overflowed their banks and caused serious widespread urban flooding.

Rainfall Amounts: The axis of heaviest rain was oriented from southwest to northeast and extended from Central NJ northeast across the Lower Hudson Valley of Southeast NY and Southwest CT. Maximum rainfall rates from 1 to around 2 inches per hour lasted for at least 3 consecutive hours across parts of the Lower Hudson Valley from 2 pm until 6 pm on the 16th.

Here are selected rainfall amounts for:

Putnam County: from 11.73 inches at the George Fischer M.S. Weather Station in Carmel to 13.70 inches at Brewster.

Rockland County: from 7.85 inches at Pomona to 10.17 inches at Congers.

Westchester County: from 5.03 inches at Tuckahoe to 12.55 inches at Granite Springs. At Westchester County Airport, 6.26 inches was measured.

Orange County: from 4.46 inches at Middletown to 8.25 inches at West Point.

Bronx County: 7.51 inches was measured by the Fordham Prep School Weather Station.

New York (Manhattan) County: from 4.06 inches at the Saint Rose of Lima Weather Station to 5.02 inches at Central Park.

Richmond (Staten Island:) County: No reports were available.

Kings (Brooklyn) County: from 3.83 inches at Graves End to 5.53 inches at the Bishop Kearney H.S. Weather Station.

Queens County: from 3.27 inches at JFK Airport to 4.94 inches at LaGuardia Airport.

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time	Path	Path	Number of		Estimated	Character of Storm	
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

ADDITIONS/CORRECTIONS

NEW YORK, Coastal

Nassau County: from 3.67 inches at Wantagh to 4.12 inches at Mineola.

Suffolk County: from 2.67 inches at Bridgehampton to 4.88 inches at Sea Cliff.

Winds: Strong and gusty winds combined with torrential rain downed many trees, tree limbs, and power lines across the area. Significant power outages resulted. Most wind gusts were from 50 to 60 mph from around 1:30 pm on the 16th to around 2 am on the 17th.

NYZ067>068

Orange - Putnam

16	1447EST								
	2000EST			0	0				High Wind (G54) ^M

Strong and gusty winds developed as the remnants of Hurricane Floyd approached Western Suffolk County on Long Island.

Wind gusts from 50 to 60 mph combined with torrential rain downed many trees, tree limbs, and power lines across the area. Significant and widespread power outages resulted.

NORTH CAROLINA, Central

NCZ007>011-021>028-038>043-073>078-083>086-088>089 - **Person - Granville - Vance - Warrren - Halifax - Forsyth - Guilford - Alamance - Orange - Durham - Franklin - Nash - Edgecombe - Davidson - Randolph - Chatham - Wake - Johnston - Wilson - Stanly - Montgomery - Moore - Lee - Harnett - Wayne - Anson - Richmond - Scotland - Hoke - Cumberland - Sampson**

04	2100EST								
	1500EST			0	0			3M	Hurricane

After meandering off the coast and ruining the Labor Day weekend for millions, the remnants of Dennis finally moved inland across the central portion of the state. Its main impact was to end the drought in the eastern half of the state.

The Triangle received from 6 to 8 inches of rain with Chapel Hill peaking out at 12 inches. The I-40 corridor of counties also got dumped on with totals in the 6 to 10 inch range. This water caused considerable urban and lowland flooding. Several main stem rivers also went into flood.

The winds with the remnants of Dennis were generally not a significant problem. There were many old, larger trees uprooted and widespread limb damage was reported. However, the wind and rain combination caused considerable crop damage.

Alamance County Countywide

05	1300EST								
	1800EST			0	0				Flash Flood

Chatham County Countywide

05	1300EST								
	1800EST			0	0				Flash Flood

Durham County Countywide

05	1300EST								
	1800EST			0	0				Flash Flood

Granville County Countywide

05	1300EST								
	1800EST			0	0				Flash Flood

Orange County Countywide

05	1300EST								
	1800EST			0	0				Flash Flood

Person County Countywide

05	1300EST								
	1800EST			0	0				Flash Flood

Wake County Countywide

05	1300EST								
	1800EST			0	0				Flash Flood

The remnants of Hurricane Dennis dumped 6-8 inches of rain across the Heart of Carolina.

This water caused many streams and creeks to overflow their banks. In the Capital area, the Crabtree Creek and Walnut Creek flooded nearby streets and communities. The same scenario was repeated across the rest of the Triangle and surrounding counties.

Wayne County Rosewood

06	1712EST								
				0	0				Thunderstorm Wind (G50)

Strong thunderstorm winds blew part of the tin roof off a church.

Wayne County Grantham

06	1817EST								
				0	0				Hail (1.75)

Golfball size hail was reported with a severe thunderstorm.

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	

ADDITIONS/CORRECTIONS

NORTH CAROLINA, Central

Edgecombe County

Countywide	06	2000EST								
	07	0500EST			0	0				Flash Flood

Tropical moisture left behind by the remnants of Dennis, produced training bands of strong thunderstorms. These dropped several more inches of rainfall onto already saturated ground and full creeks. The result was widespread flooding of roads and adjacent communities.

Wayne County

Countywide	06	2015EST								
	07	0500EST			0	0				Flash Flood

Tropical moisture left behind by the remnants of Dennis, produced training bands of strong thunderstorms. These dropped several more inches of rainfall onto already saturated ground and full creeks. The result was widespread flooding of roads and adjacent communities.

NCZ007>011-021>028-038>043-073>078-083>086-088>089 **Person - Granville - Vance - Warrren - Halifax - Forsyth - Guilford - Alamance - Orange - Durham - Franklin - Nash - Edgecombe - Davidson - Randolph - Chatham - Wake - Johnston - Wilson - Stanly - Montgomery - Moore - Lee - Harnett - Wayne - Anson - Richmond - Scotland - Hoke - Cumberland - Sampson**

	15	1600EST								
	16	1600EST			0	0	3B	500M		Hurricane

Hurricane Floyd produced more human misery and environmental impact in North Carolina than any disaster in memory. The 15-20 inches of rain that fell across the eastern half of the state caused every river and stream to flood. Many rivers set new flood records. Whole communities were underwater for days, even weeks in some areas. Thousand's of homes were lost. Crop damage was extensive. The infrastructure of the eastern counties, mainly roads, bridges, water plants, etc., was heavily damaged. By the end of 1999, \$1.5 billion had already been spent, with estimates that the cost would reach \$3-4 billion. The counties within the Raleigh county warning area probably sustained more than half of the state total.

Even worse, was the loss of life, manly due to flooding. Many Carolinians did not heed the call to evacuate and many more drove into flooded streams and rivers. In the central part of the state, 21 people lost their lives. Also, the loss of livestock was significant, mainly swine and poultry. Floyd will indeed go down in the history books.

Cumberland County

Countywide	15	2200EST								
	16	0800EST			0	0				Flash Flood

Edgecombe County

Countywide	15	2200EST								
	16	0800EST			8	0				Flash Flood

M75IW, F5IW, F3IW, M50IW, F45IW, F5IW, F23IW, M51IW

Franklin County

Countywide	15	2200EST								
	16	0800EST			0	0				Flash Flood

Halifax County

Countywide	15	2200EST								
	16	0800EST			2	0				Flash Flood

M64IW, F47IW

Harnett County

Countywide	15	2200EST								
	16	0800EST			0	0				Flash Flood

Johnston County

Countywide	15	2200EST								
	16	0800EST			3	0				Flash Flood

M30IW, M31IW, F5IW

Nash County

Countywide	15	2200EST								
	16	0800EST			4	0				Flash Flood

F87IW, M79IW, M40IW, M46IW

Sampson County

Countywide	15	2200EST								
	16	0800EST			0	0				Flash Flood

Wake County

Countywide	15	2200EST								
	16	0800EST			0	0				Flash Flood

Wayne County

Countywide	15	2200EST								
	16	0800EST			2	0				Flash Flood

M51IW, F42IW

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property Damage	Crops	

ADDITIONS/CORRECTIONS

NORTH CAROLINA, Central

**Wilson County
Countywide**

15 2200EST 0 0 **Flash Flood**
16 0800EST

Rainfall associated with Hurricane Floyd produced unprecedented flash flooding across the eastern half of the state. Every river and stream flooded nearby roads and communities. Several lives were lost due to people driving into flooded roadways or directly into streams where roads and bridges were washed out. Several earthen dams also gave way.

**Vance County
Countywide**

16 0300EST 0 0 **Flash Flood**
0900EST

**Warren County
Countywide**

16 0300EST 2 0 **Flash Flood**
0900EST

M55IW, M72IW

The flooding rains associated with Hurricane Floyd moved west as the night progressed. Rainfall amounts of 6 to 10 inches produced widespread flooding of streams and creeks. These normally placid waterways then flooding nearby roads and communities.

**Chatham County
Countywide**

16 0330EST 0 0 **Flash Flood**
0900EST

**Durham County
Countywide**

16 0330EST 0 0 **Flash Flood**
0900EST

**Granville County
Countywide**

16 0330EST 0 0 **Flash Flood**
0900EST

**Hoke County
Countywide**

16 0330EST 0 0 **Flash Flood**
0900EST

**Lee County
Countywide**

16 0330EST 0 0 **Flash Flood**
0900EST

The flooding rains from Hurricane Floyd moved east into the Triangle in the early morning hours of the 16th. Rainfall of 6 to 8 inches produced widespread flooding of streams and low lying areas.

**Edgecombe County
Countywide**

21 1145EST 0 0 **Flash Flood**
1430EST

**Johnston County
Countywide**

21 1145EST 0 0 **Flash Flood**
1430EST

**Nash County
Countywide**

21 1145EST 0 0 **Flash Flood**
1430EST

**Wilson County
Countywide**

21 1145EST 0 0 **Flash Flood**
1430EST

An area of slow moving thunderstorms dumped more unneeded rainfall on the Interstate 40 corridor of counties. Since the ground was still saturated and the rivers still full due to Dennis and Floyd, the runoff was rapid. This caused flooding of many streams and creeks. Of course, nearby roads and communities were flooded once again.

**Durham County
Countywide**

27 0808EST 0 0 **Flash Flood**
1100EST

**Granville County
Countywide**

27 0808EST 0 0 **Flash Flood**
1100EST

**Wake County
Countywide**

27 0808EST 0 0 **Flash Flood**
1100EST

**Johnston County
Countywide**

27 1800EST 0 0 **Flash Flood**
2000EST

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time	Path	Path	Number of		Estimated		Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Property	Crops	

ADDITIONS/CORRECTIONS

NORTH CAROLINA, Central

Wayne County Countywide	27	1800EST 2100EST			0	0				Flash Flood
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Wilson County Countywide	27	1800EST 2100EST			0	0				Flash Flood
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Edgecombe County Countywide	27	2330EST 0400EST			0	0				Flash Flood
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In the days after Hurricane Floyd, all the rivers in the eastern half of the state remained well above flood stage. Also, the major tributaries remained full, since they could not drain into the main stem river. Many acres around these waterways were flooded and, of course, the ground was saturated. Any additional rainfall produced immediate runoff into local streams/creeks which brought water back onto roads and into surrounding neighborhoods and communities. Since the state was still covered by a quasi-tropical airmass, even garden variety thunderstorms dropped copious rainfall amounts. The nightmare flooding simply would not end.

Wayne County Countywide	28	0230EST 1000EST			0	0				Flash Flood
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Sampson County Countywide	28	0720EST 1000EST			0	0				Flash Flood
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Johnston County Countywide	28	0730EST 1000EST			0	0				Flash Flood
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Nash County Countywide	28	0730EST 1000EST			0	0				Flash Flood
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Wilson County Countywide	28	0730EST 1000EST			0	0				Flash Flood
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Edgecombe County Countywide	28	0820EST 1100EST			0	0				Flash Flood
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Johnston County Countywide	28	1100EST 1210EST			0	0				Flash Flood
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Nash County Countywide	28	1100EST 1210EST			0	0				Flash Flood
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Wayne County Countywide	28	1100EST 1210EST			0	0				Flash Flood
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Wilson County Countywide	28	1100EST 1210EST			0	0				Flash Flood
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Edgecombe County Countywide	28	1630EST 1925EST			0	0				Flash Flood
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Johnston County Countywide	28	1630EST 1925EST			0	0				Flash Flood
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Nash County Countywide	28	1630EST 1925EST			0	0				Flash Flood
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Sampson County Countywide	28	1630EST 1925EST			0	0				Flash Flood
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Wake County Countywide	28	1630EST 1925EST			0	0				Flash Flood
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Wayne County Countywide	28	1630EST 1925EST			0	0				Flash Flood
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Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ADDITIONS/CORRECTIONS

NORTH CAROLINA, Central

Wilson County Countywide	28	1630EST 1925EST			0	0			Flash Flood
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Durham County Countywide	28	1730EST 1930EST			0	0			Flash Flood
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Orange County Countywide	28	1730EST 1930EST			0	0			Flash Flood
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In the days after Hurricane Floyd, all the rivers in the eastern half of the state remained well above flood stage. Also, the major tributaries remained full, since they could not drain into the main stem rivers. Many acres around these waterways were flooded and, of course, the ground was saturated. Any additional rainfall produced immediate runoff into local streams/creeks which brought water back onto roads and into surrounding neighborhoods and communities. Since the state was still covered by a quasi-tropical airmass, even garden variety thunderstorms dropped copious rainfall amounts.

Montgomery County Countywide	29	1106EST 1235EST			0	0			Flash Flood
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Anson County Countywide	29	1608EST 1800EST			0	0			Flash Flood
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Richmond County Countywide	29	1640EST 1805EST			0	0			Flash Flood
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Montgomery County Countywide	29	2030EST 2135EST			0	0			Flash Flood
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Randolph County Countywide	29	2030EST 2135EST			0	0			Flash Flood
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Durham County Countywide	30	0030EST 0140EST			0	0			Flash Flood
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Granville County Countywide	30	0030EST 0140EST			0	0			Flash Flood
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Vance County Countywide	30	0030EST 0140EST			0	0			Flash Flood
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Deep tropical moisture remained over North Carolina at the end of September. Several days of scattered thunderstorms had saturated the ground in the Piedmont once again. The approach of a strong cold front was finally going to end our wet spell. However, the associated warm front with the system produced a persistent area of thunderstorms which flooded many low lying areas and secondary roads.

Stanly County Locust	29	1700EST	0.1	50	0	0	25K		Tornado (F2)
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A tornado touched down briefly and took the entire roof off a brick ranch. No other damage was noted in the area. A spotter was tracking the funnel.

Stanly County 3 NE Albemarle	29	1725EST			0	0	10K		Thunderstorm Wind (G50)
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The same thunderstorm that spawned a tornado in Locust produced a downburst on the out skirts of Albermarle which damaged three mobile homes.

Stanly County Albemarle	29	1800EST 1815EST	6	100	0	0	3M		Tornado (F2)
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A second tornado, spawned by another thunderstorm, dropped a tornado 6 miles west of Albemarle. It destroyed a modular home, then did serious damage to the roof of a church. Several large trees were also taken down in the area. This was near the community of Lambert. The tornado then produced sporadic tree and roof damage on its way to the southern part of Albemarle. Several businesses were then heavily damaged and a lock and store facility was destroyed. The tornado then apparently dissipated.

Randolph County Seagrove	29	1850EST			0	0			Thunderstorm Wind (G50)
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Strong thunderstorm winds blew down trees and power lines near Seagrove, per the 911 center.

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time	Path	Path	Number of		Estimated	Crops	Character of Storm
		Local/ Standard	Length (Miles)	Width (Yards)	Killed	Injured	Damage		

ADDITIONS/CORRECTIONS

NORTH CAROLINA, Central

Montgomery County

Uwharrie	29	1910EST	0.2	50	0	0			Tornado (F0)
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The thunderstorm that produced the damage in Albemarle spawned yet another tornado after it moved into Montgomery county. On Buck Mountain Road, in the Uwharrie Forest, trees and power lines were blown down. The ranger described a distinct path of uprooted and snapped trees.

Chatham County

Siler City	29	2030EST			0	0			Thunderstorm Wind (G50)
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Strong thunderstorm winds blew trees down south of Siler City, per the 911 center.

SOUTH DAKOTA, Central and North

Potter County

10 SE Gettysburg	02	2215CST			0	0	14K		Flash Flood
	03	0930CST							

Sully County

Onida	02	2215CST			0	0	275K		Flash Flood
	03	1850CST							

Faulk County

Seneca to Cresbard	02	2230CST			0	0	10K		Flash Flood
	03	0930CST							

Hughes County

Blunt	02	2230CST			0	0	175K		Flash Flood
	03	0930CST							

Stanley County

Ft Pierre	02	2230CST			0	0	20K		Flash Flood
	03	0930CST							

Brown County

Aberdeen to Hecla	03	0005CST			0	0	5K		Flash Flood
		0930CST							

Edmunds County

10 S Mina	03	0005CST			0	0	5K		Flash Flood
		0930CST							

Hyde County

20 NW Highmore	03	0300CST			0	0			Flash Flood
		0930CST							

Very heavy rains from thunderstorms repeatedly going over the same area resulted in extensive flash flooding in a 30 to 40 mile wide band from Fort Pierre in southeast Stanley County to Hecla in northeast Brown County. Rainfall amounts in this corridor ranged from 3 to 7 inches. As a result, the communities of Blunt in Hughes County and Onida in Sully county were severely flooded. Most of the homes and businesses were flooded throughout Blunt and Onida causing severe damage. Only a few homes in these communities were spared from receiving water in there basements. Most homes also experienced sewer backup. The sewer systems in both Onida and Blunt were flooded and shutdown. Many people had to go to temporary shelters as a result of the flooding. Aberdeen and Fort Pierre had a lot of street flooding resulting in road closures and detours. Also, several basements in Aberdeen and Fort Pierre had sewer backup.

The heavy rain flooded many township and county roads along with several state and U.S. highways. Sections of Highways 14, 20, 83, and 1806 along with many other roads in central and northeast South Dakota had to be closed. Many of the township and county roads had massive amounts of gravel washed away. Some bridges received minor damage with some culverts also lost. A few pets and livestock were also lost as a result of the flooding. Many acres of crops were flooded throughout the area. The DM & E railroad had some of its trackline flooded for a time. Some rainfall amounts included, 3 inches at Fort Pierre, 4 inches at Hecla and in the Aberdeen Area, 5 inches at the Sand Lake Wildlife Refuge and at Blunt, 6 inches at Seneca, 7 inches 10 miles southeast of Gettysburg and at Onida.

VIRGINIA, East

Fluvanna County

Countywide	29	2335EST			0	0	3K		Thunderstorm Wind
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Numerous trees down.

Louisa County

Countywide	29	2350EST			0	0	3K		Thunderstorm Wind
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Numerous trees down.

Amelia County

Amelia	30	0010EST			0	0	5K		Thunderstorm Wind
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Roof was blown off a barn just northeast of Amelia courthouse.

Storm Data and Unusual Weather Phenomena

September 1999

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ADDITIONS/CORRECTIONS

VIRGINIA, East

Henrico County Short Pump

30	0022EST								
				0	0	2K			Thunderstorm Wind

Trees down.

Caroline County Return

30	0028EST								
				0	0	2K			Thunderstorm Wind

Trees down on Route 681 near Route 17.

Richmond (C) Richmond

30	0035EST								
				0	0	4K			Thunderstorm Wind

Numerous trees down. Trees down on vehicles.

Reference Notes:

Fatality Location Abbreviations:

BF	Ball Field	MH	Mobile Home
BO	Boating	OT	Other
BU	Business	OU	Outside/Open Areas
CA	Camping	PH	Permanent Home
EQ	Heavy Equipment/Construction	SC	School
GF	Golfing	TE	Telephone
IW	In Water	UT	Under Tree
LS	Long Span Roof	VE	Vehicle

List of Acronyms:

WCM	- Warning Coordination Meteorologist
NWS	- National Weather Service
NOAA	- National Oceanic and Atmospheric Administration
DST	- Daylight Savings Time
LST	- Local Standard Time
LDT	- Local Daylight Time

Other Notes:

When listing wind speed values under “Character of Storm”, ex. High Wind (G81), the “G” indicates a “Gust” which is a peak 5-second averaged wind speed in Knots (kts). 1 kt. = 1.152 mph.

When listing hail size under “Character of Storm”, ex. Hail (2.25), the hail size is given in inches and hundredths of inches.

When listing property and crop damage, the figures indicated are the best guess made by the NWS from the available sources of information at the time of the printing.

The Saffir-Simpson Scale

Category One Hurricane:

Winds 74-95 mph (64-82 kt or 119-153 kph). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage.

Category Two Hurricane:

Winds 96-110 mph (83-95 kt or 154-177 kph). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings.

Category Three Hurricane:

Winds 111-130 mph (96-113 kt or 178-209 kph). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Flooding near the coast destroys smaller structures with larger structures damaged by battering of floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required.

Category Four Hurricane:

Winds 131-155 mph (114-135 kt or 210-249 kph). Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km).

Category Five Hurricane:

Winds greater than 155 mph (135 kt or 249 kph). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required.

The Fujita Scale

F-Scale	Intensity	Wind Speed (mph)	Typical Damage
F0	Gale Tornado	40 - 72	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.
F1	Moderate	73 - 112	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant	113 - 157	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	Severe	158 - 206	Roof and some walls torn off well constructed houses; trains overturned; most trees in fores uprooted
F4	Devastating	207 - 260	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	Incredible	261 - 318	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-inforced concrete structures badly damaged.
F6	Inconceivable	319 - 379	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds.

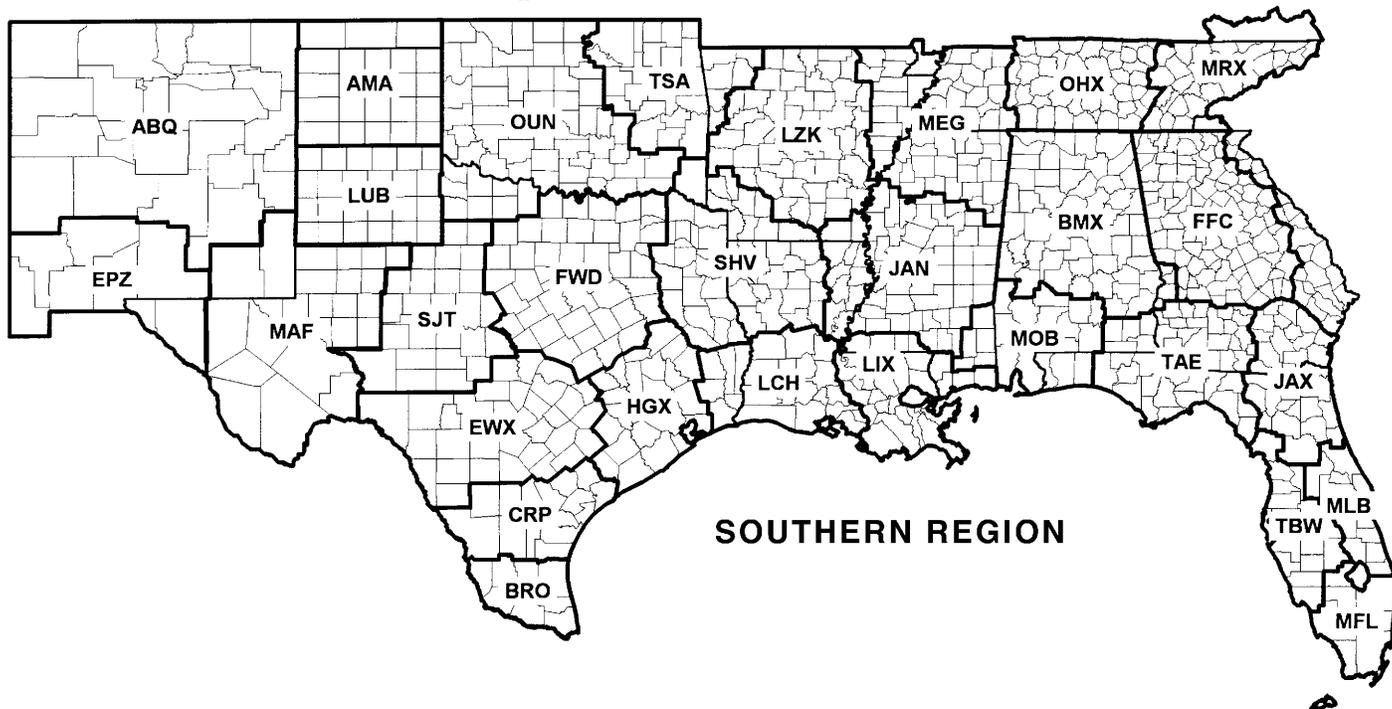


* From the Journal of Atmospheric Science, August 1981, p. 1517-1519

COUNTY WARNING & FORECAST AREAS - MODERNIZED NWS

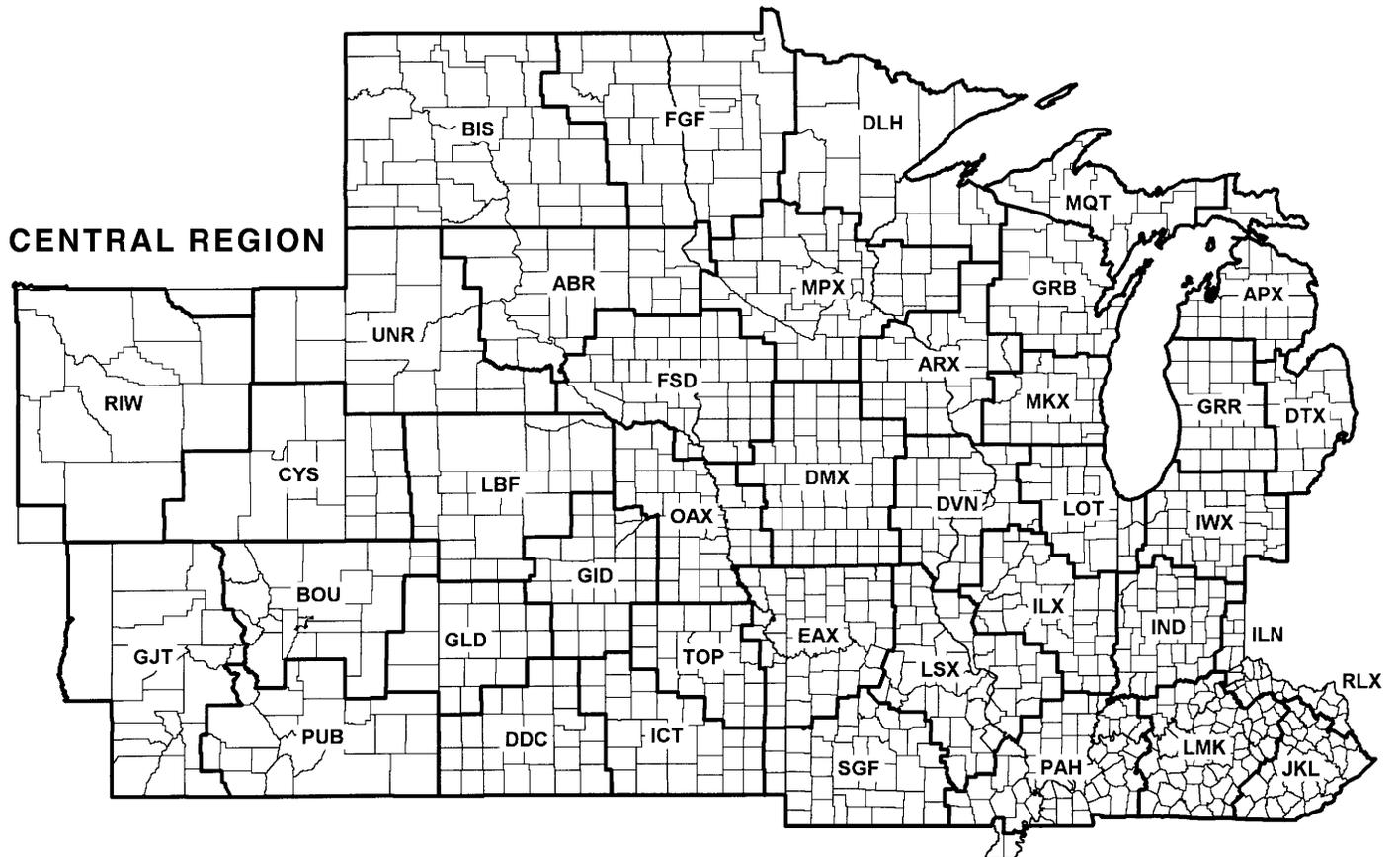
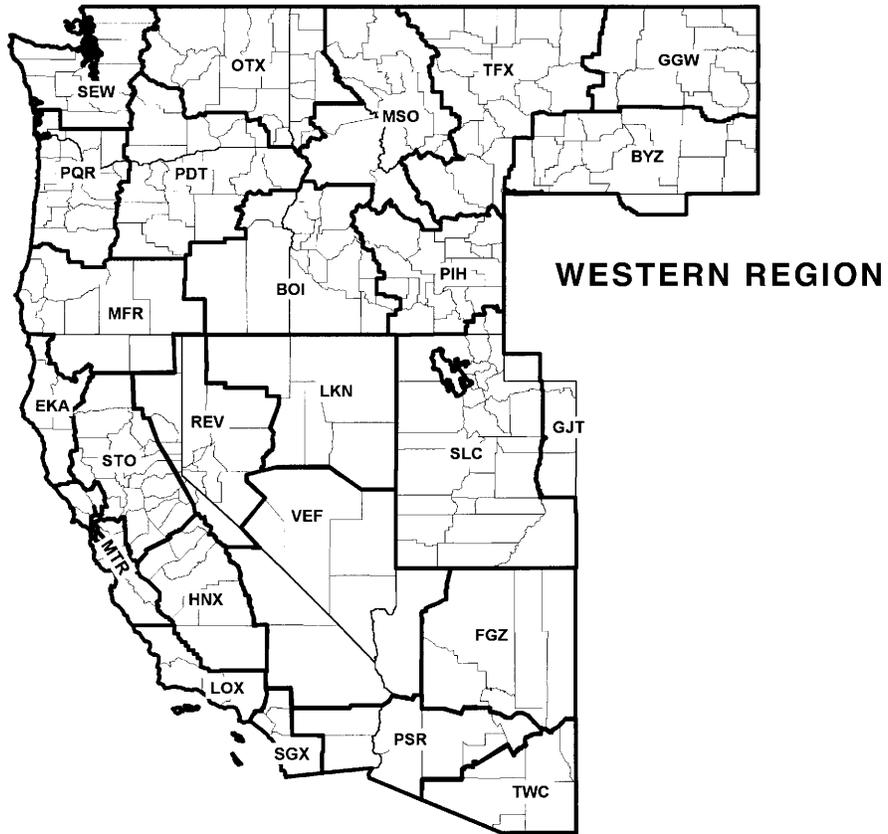


EASTERN REGION

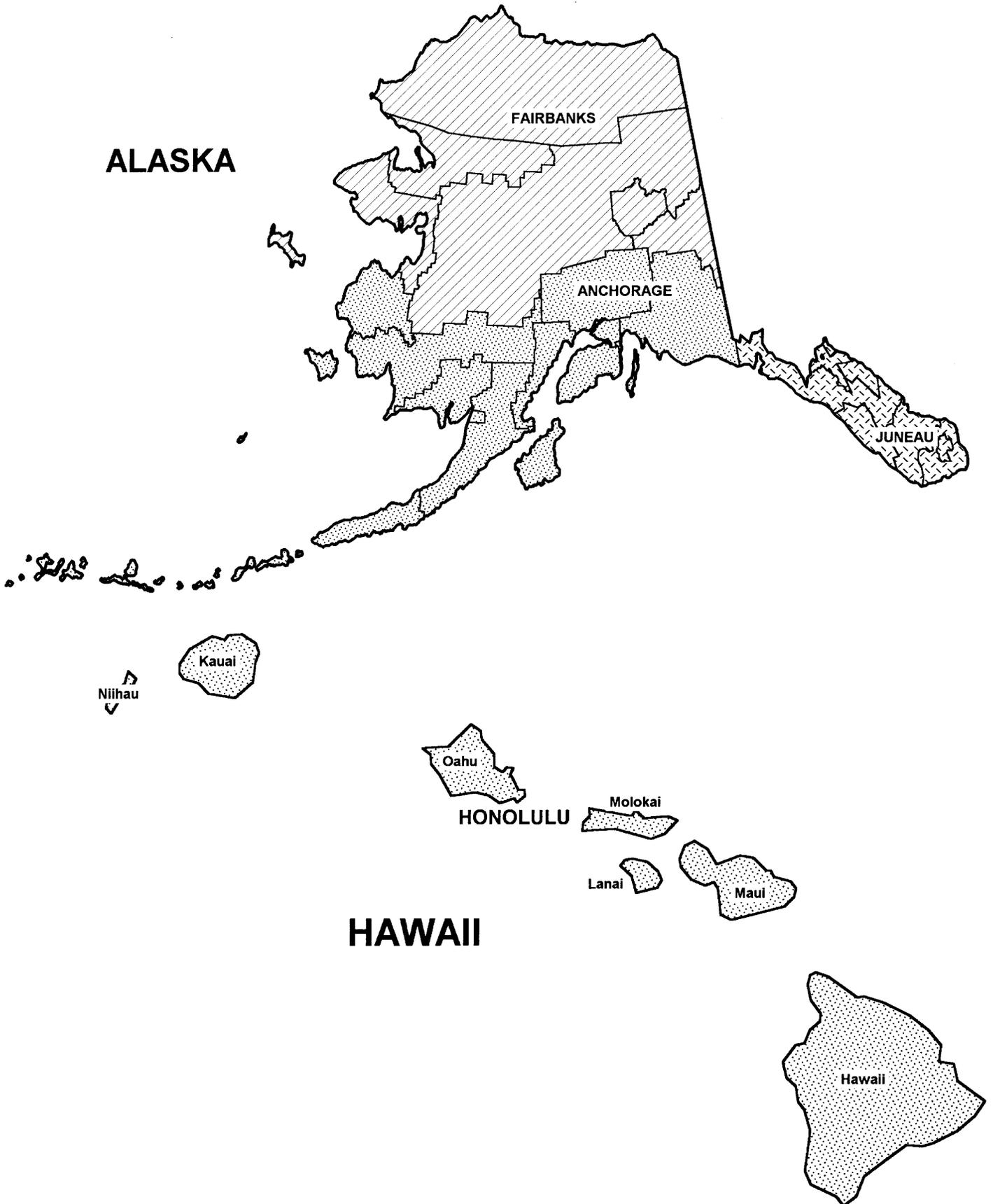


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MODERNIZED COUNTY WARNING AREAS



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